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POISONING BY STRYCHNINE.

Court of Common Pleas of Union County, Ohio, September Term, (Adjourned Session in November) 1863. [*Before Wm. Lawrence, Judge.*] *State of Ohio* vs. *Mary Freet and Lothrop Converse.* Reported by Hon. WM. LAWRENCE, Judge of the Court of Common Pleas of the 3d Judicial District of Ohio; and T. G. WORMLEY, M.D., Professor of Chemistry and Toxicology in Starling Medical College, Columbus, O.

The first count of the indictment reads thus:

THE STATE OF OHIO, } ss.
UNION COUNTY, }

Court of Common Pleas within and for the County of Union, in the State of Ohio, of the term of March, in the year of our Lord one thousand eight hundred and sixty-three.

The Jurors of the Grand Jury of the State of Ohio, duly elected, impanneled, sworn and charged, to inquire of crimes, offenses and misdemeanors committed within the body of the county of Union aforesaid, in the State of Ohio, in the name and by the authority of the State of Ohio, upon their oaths, do find and present that Mary Freet and Lothrop Converse, late of the county of Union aforesaid, in the State of Ohio, contriving and intending, one William Freet with poison, unlawfully, feloniously, willfully, purposely, and of their deliberate and premeditated malice, to kill and murder, on the thirteenth day of February, in the year of our Lord one thousand eight hundred and sixty-three, with force and arms, at the county of Union aforesaid, in the State of Ohio, unlawfully, feloniously, willfully, purposely, and of their deliberate and premeditated malice, a large quantity, to-wit: four grains of a certain deadly poison called strychnine, did administer unto the said William Freet, with the intent then and there, that he, the said William Freet, should then and there take and swallow down the said strychnine into the body of him, the said William Freet; they, the said Mary Freet and Lothrop Converse, then and there, well knowing the said strychnine to be a deadly poison, and the said strychnine so administered unto him, the said William Freet, by the said Mary

Freet and Lothrop Converse as aforesaid; he, the said William Freet, did, then and there, at the instance and solicitation of them, the said Mary Freet and Lothrop Converse, take and swallow down into the body of him the said William Freet; he, the said William Freet, then and there, not knowing the said strychnine so administered to be a deadly poison, by reason and by means of which said taking and swallowing down of the said strychnine into the body of him, the said William Freet as aforesaid; he, the said William Freet, became, then and there, mortally sick and distempered in his body, of which said mortal sickness and distemper he, the said William Freet, on the said thirteenth day of February, in the year of our Lord one thousand eight hundred and sixty-three, at the county of Union aforesaid, died; and so the jurors aforesaid, upon their oaths aforesaid, do say that the said Mary Freet and Lothrop Converse, him, the said Wm. Freet, in manner and form aforesaid, unlawfully, feloniously, willfully, purposely, and of their deliberate and premeditated malice did, then and there, kill and murder contrary to the form of the statute, in such case made and provided, and against the dignity of the State of Ohio.

JOHN B. COATS,
Prosecuting Attorney of Union County.

John B. Coats, Prosecuting Attorney, and *John D. VanDeman* appeared for the State.

Columbus Delano, Ozias Bowen, Walter H. Smith, Perley B. Cole, Henry T. Porter, appeared as counsel for defendant, Mary Freet.

James H. Godman, Chauncey N. Olds, James W. Robinson, P. B. Case, appeared as counsel for defendant, Lothrop Converse.

The statute requiring the defendants to be separately tried, the Prosecuting Attorney elected to proceed with the trial of Mary Freet first. *State* v. *Crank*, 2 Bailey S. C. 66. The case was continued, on motion of the Prosecuting Attorney, as to defendant Converse, because of the absence of two material witnesses.

At the March Term, 1863, of this Court, the following Journal entry was made:

"This day the following persons, whose names were contained in the venire facias heretofore issued by the Clerk of this Court in pursuance of law and summoned as a Grand Jury for the present term of this Court being called, came, to-wit: [Thirteen men named.] R P. Wilkinson, whose name was contained in said venire facias, did not appear; and the Sheriff having made return of not found as to J. H. Henderson, whose name was also contained in said venire facias, thereupon John B. Coats, the Prosecuting Attorney within and for the said county of Union, proceeded to challenge the entire array of the said Grand Jury summoned for this term, and who appeared as aforesaid, for the reason and the cause that the said

J. H. Henderson, whose name was drawn and contained in the said venire facias, at the time his name was so drawn and placed in said venire facias, was not and is not now a citizen and resident of the said county of Union; and the Court being satisfied that the said J. H. Henderson was not and is not now a citizen, resident or elector in said county of Union—it is, therefore, considered adjudged and ordered by the Court that the said panel and array of the Grand Jury summoned, in and by virtue of the said venire facias as aforesaid, be and the same is hereby set aside. And thereupon the Court, in pursuance of law, ordered and awarded a new venire facias to be issued by the Clerk of this Court for the following named persons, good and lawful men, resident of the said county of Union, in the State of Ohio, having the qualifications of electors, to appear forthwith to serve as Grand Jurors for the present term of this Court, to-wit: [Fifteen men named; all, except three, same as in former venire.] Which said venire facias was issued accordingly, and duly served and returned by the Sheriff."

In obedience to the *venire* issued by the Clerk, in pursuance of the foregoing order, the persons last above-named appeared and were impanneled as a Grand Jury, and returned the indictment in this case at March Term, 1863.

At September Term, (Adjourned Session, December,) 1863, counsel for defendant, Mary Freet, moved to quash the indictment, because the Grand Jury was not legally organized. They cited "An act relating to Juries," passed February 9, 1831. Swan & C. Stat. 751; 3 Chase Stat. 1705—and argued:

I. The 16th section of the Act only authorizes the *array* to be challenged when there is an illegality in the mode of drawing or summoning the whole jury, or when (if the drawing and summoning has been legal) *all* the jurors are disqualified. If one or more, but not all of the jurors have some disqualification, the jurors so disqualified should be challenged and their place supplied, but not the whole array. This is the effect of the 9th section of the Act. *Woodsides* v. *State*, 2 How. Miss. 685; *Jetton* v. *State*, 1 Meigs 192; *State* v. *Jacobs*, 6 Texas 99.

II. The 9th section of the Act as amended and took effect March 31, 1859, 56 Vol. Stat. 95, only authorizes the Clerk, by order of the Court, to issue a venire with the names therein ordered by the Court in the cases therein named, and *the names inserted in the venire should be drawn from the box mentioned in the 4th section*

of the Act, containing the names of the jurors. The names should be drawn from the box because of what is said in the last clause of section 8 of the Act.

The Prosecuting Attorney cited *Forsythe* v. *State*, 6 Ohio R. 19; *Henly* v. *State*, 6 Ohio R. 399.

By the Court—Wm. Lawrence, J.: The practice adopted in organizing the Grand Jury is that which has uniformly prevailed. Its correctness is directly and unequivocally sustained by a decision of *Ranney and Caldwell*, Judges, holding the Supreme Court on the Circuit in Logan County, June term, 1851, *Jones* v. *State*, 8 Western Law Journal, 508.

The Act of 1831, relating to Juries, as amended March 31, 1859, contains these provisions:

"Sec. IX. That when a sufficient number of grand jurors shall not appear, who shall have been drawn and summoned agreeably to this act, before either of the courts at their stated term, or, if it should so happen that all the grand jurors, summoned as aforesaid, shall fail to attend, it shall and may be lawful for the court, in either case, to order the sheriff, or other officer, to summon from among the bystanders, or neighboring citizens, so many good and lawful men as are necessary to form and complete the panel of the grand jury, or to issue a special *venire facias* to the sheriff, commanding him to summon the persons therein named to attend forthwith to serve as grand jurors.

"Sec. X. That any grand juror may be discharged by the court for misbehaviour, or on the challenge of the prosecuting attorney in behalf of the state, on good cause shown. And if any person, not having the qualifications hereinbefore specified, shall be impanneled as a grand or petit juror, it shall be a good cause of challenge to such juror, who shall be discharged on the same being verified according to law, or on his own oath or affirmation in support thereof.

"Sec. XVI. That when a grand or petit jury shall be selected, drawn, or summoned contrary to the provisions of this act; or where the sheriff, or other officer, in executing the writ of venire facias to him directed, shall not have proceeded as hereinbefore prescribed; then, and in either of those cases, the whole array of the jury may be challenged and set aside, and a new venire facias awarded, returnable forthwith, in the same manner as if the whole number of grand or petit jurors had failed to attend the court, or had been challenged for cause and set aside by the court."

Assuming for the present the array was properly set aside, then the *venire* was properly issued for the new grand jury. In every

court wherein the common law prevails, when the court, by its common law or statutory powers, is authorized to issue a writ, it is prepared and signed by the Clerk under seal, and that is the evidence that it is issued by the clerk. Now, as the statute requires this venire to command the sheriff "to summon the persons therein named," the practice is, and the law requires the Judge to furnish or direct what names shall be therein inserted, and the writ is evidence that this has been done. It is urged that if this is all true yet the names must be drawn from the jury box, because the 8th section of the jury statute declares:

"And at the close of any court, the names of all such persons as shall have served on the jury at that term, shall be taken out of the box and destroyed."

This relates only "to such persons as shall have [been drawn from the jury box and] served on the jury," for no others could "be taken out of the box and destroyed."

Could the court properly set aside the *array?*

The statute requires that the jurors shall have the qualification of electors—sec. 1. One juror was "*selected*, drawn and summoned" who was not an elector, and he could not, therefore, properly serve. Now, it may be that the 10th section would authorize the court to discharge that juror. It provides that "if any person not having the qualifications hereinbefore specified [of an elector] shall be impanneled as a grand or petit jurror, it shall be a good cause of challenge to such juror, who shall be discharged."

But as this relates to *all* jurors who are "impanneled," it gives the court power to discharge *jurors who have not been "selected, drawn or summoned"* at all, as, for instance, the large number of jurors who are *talesmen*—called by the sheriff without a venire, without being drawn from the box—bystanders, to fill the places of absent jurors on the grand and petit jury.

Thus, section 8 provides:

"And in case there should not, by reason of challenge or otherwise, be a sufficient number of jurors present to make up the panel, the sheriff shall summon a sufficient number of talesmen to make up the deficient number.

And there are other provisions for calling *talesmen*. But if section 10 did authorize a challenge of *one* disqualified juror, it would not exclude another statutory authority to challenge the whole array. Sec. 9 authorizes *two* modes, either one of which may be adopted in selecting a whole jury, and why may not two modes of making up a jury exist when there is but one disqualified juror.

If the statute gives a clear right to challenge the array in the case under consideration, then it might well be argued, perhaps, that the 10th section *should be limited to another class of cases*—to *talesmen* jurors—to jurors "impanneled" *only*, as the section says, but not to other jurors, "selected, drawn and summoned."

The 9th and 16th sections, taken together, show very clearly that the challenge to the array was authorized. The latter section treats the jury as an *entirety*.

Section 16 declares "that when a grand or petit jury shall be selected, drawn, or summoned, contrary to the provisions of this act, * * the whole array of the jury may be challenged."

That is, when in any respect, as to any juror, there is error in the selection, drawing or summoning, the array may be challenged.

It can scarcely be said that this grand jury was *selected* according to the act, for the *selection* included a man not qualified. And, in such case, this section, *by its reference to the amended section* 9, authorizes a new *venire*.

Section 9 would seem to authorize the Court to fill up a *part* of a jury when all do not appear, by ordering a *venire* or directing the sheriff to summon *talesmen*. And it is claimed that by its provisions the place of the disqualified juror might have been filled. If that be so, it does not exclude the right to set aside the array as authorized by section 16.

But section 9 has no reference to the case. It only applies to the case where a *part* of a *legal jury*, "drawn and summoned agreeably to this act," as it declares, and to cases where "all the grand jurors summoned as aforesaid," fail to appear.

It might apply, perhaps, to the case where the whole grand jury

"*summoned*" failed to appear, whether legally "drawn and summoned" or not, but its application to cases where only a *part* appear, is to juries "drawn and summoned agreeably to this act."

When the act was originally passed, section 9 made no provision for a special *venire*, and, of course, there could not then be a special *venire* under section 16. But section 9 was amended March 31, 1859—56 Vol. Stat. 95—so as to authorize a *venire*.

It cannot be doubted but this also *enlarged* the authority conferred by section 16, so as to authorize a special *venire*. The amended section takes its place in the State as a part of it. *Ludlow* v. *Johnson*, 3 Ohio R. 572; Ohio Const., Art. 2, Sec. 16; *McKibben* v. *Lester*, 9 Ohio St. R. 627; 1 Bishop Cr. Law, Sec. 95 n.; see *Stall* v. *Macalister*, 9 Ohio R. 19; 1 Curwen Stat. 17.

It may well be doubted whether, if the order setting aside the array was irregular, it could effect the new grand jury or indictment found by them. They were a legal grand jury. The action of the Court in ordering them remains in force, unreversed, and its correctness may not be collaterally inquired into. *U. S.* v. *Wilson*, 6 McLean, 604; *Stewart* v. *State*, 1 Ohio St. R. 68; *State* v. *Brooks*, 9 Alab. 9; 7 S. & M. 58; *Rafe* v. *State*, 20 Geo. 60; *Dowling* v. *State*, 5 Smedes & Marsh. 664; *Haight* v. *Holley*, 3 Wend. 258; *People* v. *Jewett*, 3 Wend. 314; *Anderson* v. *State* 5 Pike, 444; *Gibson* v. *Com.*, 2 Virginia cases, 111; *Bellair* v. *State*, 6 Blackf'd, 104; 6 Wedell, 96, 98; see *Judge* v. *State*, 8 Geo. 173; *Cole* v. *Perry*, 6 Cow. 584; *Colt* v. *Eves*, 12 Cown. 243; but see *State* v. *Hardin*, 2 Rich. 533; *U. S.* v. *Cropper*, 1 Morris 169; *State* v. *Conner*, 5 Blackf'd, 325.

The Court has undoubted power to discharge a grand jury and summon a new one, and this may be regarded as such. *Hunt* v. *Scobie*, 6 B. Mon. 469; *Straughn* v. *State*, 16 Ark. 37; *Findley* v. *People*, 1 Mann. (Mich.) 234.

It has been held that such formal objections should be taken at the *first term*. *State* v. *Claussa*, 11 Alab. 57; *State* v. *Seaborn*, 4 Dev. 305; *State* v. *Freeman*, 6 Blackf'd, 248; *Vattier* v. *State*, 4 Blackf'd, 72; *Dixon* v. *State*, 3 Clarke, Iowa, 416; *State* v. *Hinkle*, 6 Ib. 380.

Error does not generally lie upon mere matters of practice in the inferior court. 3 Peters, 445; 4 Ohio R. 135.

Motion to quash overruled.

The defendant being arraigned pleaded NOT GUILTY. A jury was duly impanneled and the case proceeded to trial.

During the trial a question was made whether a physician or chemist could give his professional opinion as an expert as to the effect of poisons, the symptoms it produces, and the appearances which follow after death from it, except from *actual experience.*

By the Court, WM. LAWRENCE, Judge:—A chemist or physician may give his professional opinion, though it "may be in some degree founded on scientific books" of acknowledged standard authority. It is not possible that any one man can, from actual observation and experience, know all that is contained in the scientific books of a profession.—Abercrombie on the Intellectual Powers, p. 47. These are the accumulated learning of ages, the combined results of the experience and observation of many scientific men. The lectures of eminent men at medical colleges, of established reputation, impart vast learning in connection with that of books. It cannot be that all this is to be lost in the investigation of truth in Court. Elwell on Malpractice and Medical Evidence, 331; 1 Greenleaf Evidence, Sec. 440; *Collier* v. *Simpson,* 5 Car. & Payne 73; *Cocks* v. *Purday,* 2 Car. & Kirw. 270; *Bowman* v. *Woods,* 1 Iowa R. 441; *May* v. *Ohio,* 14 Ohio Rep. 461; Smith's Analysis of Medical Evidence 126; Guy's Medical Jurisprudence, 20. A professional witness may, therefore, state his opinion, though not derived from actual experience. The want of such experience goes to the jury as affecting the value of the testimony.

During the progress of the trial, the State gave evidence tending to prove that William Freet resided with his wife (the defendant), their little son, about four years of age, and John Freet, an elderly man, the father of William Freet, in a house in Unionville, Union county; that on the 4th of February, 1863, Freet said to his wife at breakfast, that his coffee was bitter, and he did not

drink it; that the coffee in the cup of Freet's father was not bitter; that on the evening of the same day Freet, his father and defendant were setting at the table, at which corn-meal mush and milk were prepared for supper; that at supper Freet said to his wife his mush and milk were so bitter he could not eat it, and did not, but left it on the table; that each one had his usual place of sitting at the table; that the mush was all on one dish and the milk in separate cups, and that the father's milk was not bitter, though the mush was bitter with salt; that on the next morning a neighbor came into Freet's and said their cat was dead; that subsequently the cat was found dead, the contents of the stomach analized and contained strychnine and small roundish lumps of mush; that defendant did the cooking for the family, consisting of Freet, his wife, the little son, four years of age, and Freet's father; that on February 13, 1863, Freet was unwell, though able to be out in the village; that a physician prescribed for him calomel and dover's powders, mixed in six powders, and a solution of tartarized antimony, the calomel and dover's powders to be given once in three hours, commencing at 3 P. M., and the solution between times; that Freet took the medicine as prescribed, his wife giving the powders at 3, 6 and 9 P. M., in wafers of dough, prepared by her; that soon after the powder which was taken at 9 P. M., Freet asked his wife for something to eat, when she prepared tea with toasted bread in it; that in about half an hour Freet began to scream and continued in convulsions for about three-quarters of an hour, when he died, about fifteen minutes after 11 P. M.; that during the evening, and until after the spasms commenced, no person was known to be about the house except Freet, the deceased, his father, the defendant, and the little son of Freet and wife; that the physician prescribed the medicine stated for what seemed to be indications of pneumonia; that a *post mortem* examination revealed no indications of pneumonia, but a chemical analysis of the stomach, heart and bladder, shows the presence of strychnine, by which eighteen one-hundredth parts of a grain of strychnine was obtained from the stomach alone; that the three unadmistered

powders, and the solution remaining, contained no strychnine, and that the medicine presented by the physician contained none; that in January, or early in February, 1863, the defendant, Converse, and Mary Freet were in a back room of her house alone, when she asked Converse if there was much talk about them. He replied to her, there was not, except by two women in the village, and that Converse then said to her she should consider him the best friend she had in the world, and that they would try and enjoy themselves in some way; that Converse and his wife, and Freet and his wife were together on one occasion that winter, when Freet requested Converse not to visit his house, and Converse said to Freet he should have no cause to find fault with him thereafter; that a short time prior to the conversation between Converse and Mary Freet, a witness saw her sitting on his lap when they were alone.

BOWEN, for defendant, moved to rule out this last statement of the witness. He argued that it only shows that defendant has relaxed her hold on propriety or morality and seeks a conviction for that reason. It would be competent if there were first evidence of a conspiracy to murder Freet.

VANDEMAN, for State. We state professionally that we expect to show a conspiracy between Converse and defendant to poison Freet. It is competent also as evidence of a motive which defendant had to poison her husband.

By the Court—I instruct the jury that this evidence is not to be considered for the purpose of inducing a conviction because defendant may have been guilty of an impropriety or immorality. If she has been so guilty, it is not to be inferred that because of it she may be guilty of murder. *Farrer* v. *State*, 2 Ohio St. R. 54. It is not evidence to prove the *corpus delicti*. Note 288, to page 438, Phil. Ev.; C. & H. Notes, 474; 2 C. H. Rec. 143, per *Livingston*, J.; 3, Stark Ev. 491—2 n. But it is competent and is to be considered by the jury for the purpose of determining whether she had a *motive* to make way with her husband. It is to be considered as evidence tending to show an alienation of her affections

from her husband by having an affection for Converse; and so far as the jury may find this to be so, they will determine how much weight may attach to it as proving a motive to destroy William Freet if he stood in the way of her enjoyment of the society of Converse. *State* v. *Zellers*, 2 Halst. 220, 234; *State* v. *Teckell*, 1 Hawks, 210. It would be competent, also, if the foundation is laid to show a conspiracy between defendant and Converse to poison Freet. Wharton & Stille, Medical Jurisprudence, 714, 746; Wharton's American Crim. Law, sec. 635; *State* v. *Rash*, 12 Wedell, 382; *State* v. *Hendrickson*, tried 1853, Albany County, New York; *State* v. *Richardson*, tried in New Hampshire, 1860; *State* v. *Watkins*, 9 Conn. 47; *Johnson* v. *State*, 17 Alabama, 618; *Chapman's Case*, Wharton & Stille Med. Jurisp. 714; *Stout* v. *People*, 4 Parker Crim. R. (N. Y.) 71; *State* v. *Hinkle*, 6 Clarke Iowa R. 380.

The State then gave evidence of other acts of familiarity between defendant and Converse, including many and frequent visits to Freet's house.

The State proceeded with evidence tending to show: That the railroad train came into Unionville about 4 P. M., February 13; that about half past 4 of that day Converse went into Freet's house where Mary Freet was, and remained about 15 minutes; that about 8 P. M. Converse went across the street to Freet's house, opened the door, stood on the door sill, leaned part of the way in the house, staid about a minute and a half and left; that after the convulsions commenced, Converse, at the request of John Freet, who went for him, came to the house and applied water to Freet's head in the way of administering relief; that Converse went to Columbus on the morning of February 13th, and returned to Unionville on the 4 P. M. train. The State now offered to prove that Converse purchased strychnine at Columbus on the 13th of February.

Bowen objects. It is only competent as evidence after a conspiracy is established between Converse and defendant to poison

William Freet. *Patton* v. *State*, 6 Ohio St. R. 467; *Fouts* v. *State*, 7 Ohio St. R. 471.

VanDeman—There is such evidence of conspiracy as renders the evidence competent, and it is proper to show that defendant had the means of procuring and did have strychnine. *Farrer* v. *State*, 2 Ohio St. R. 81; *Breese* v. *State*, 12 Ohio St. R. 155; *Preston* v. *Bowers*, 13 Ohio St. R. 13; Wharton's American Crim. Law, sec. 235, 1, 2; *Com.* v. *McLean*, 2 Parsons 368–9; *R.* v. *Parsons*, 1 W. Black. 392; *R.* v. *Murphy*, 8 C. & P. 297; *People* v. *Mather*, 4 Wendell, 229; *Den* v. *Johnson*, 3 Harrison, 87; *State* v. *Trexter*, 2 Car. L. Jour. 90; *R.* v. *Hammond*, 2 Esp. 718.

By the Court—The evidence is competent as tending to show that defendant had the means of procuring strychnine, and so is admitted. Its competency on the alleged ground of conspiracy need not now be decided.

The witness then stated that he sold Converse a drachm of strychnine in a drug store in Columbus, on 13th February, about noon, in a small phial.

The State then offered to prove declarations of Converse made at the time of buying the strychnine.

Delano objects.

By the Court—As a part of the *res gestae* this evidence would be competent as showing the purpose of Converse, but not against defendant, unless upon the ground of a *conspiracy*. But how is the conspiracy to be proved? Is a case to be made beyond a reasonable doubt, or a *prima facie* case, or is it sufficient that there be evidence *tending* to prove a conspiracy? Is it for the court or jury?

It seems to me sufficiently settled that the question in the first instance is for the court; that it is sufficient if there be evidence *tending* to prove a conspiracy; that the jury must *review* the finding of the court, and reject the *declarations*, unless they find the conspiracy proved beyond a reasonable doubt. When there is such evidence tending to prove the existence of the conspiracy every act and declaration of each member of the confederacy,

after and in pursuance of the original concerted plan, and with reference to the common object, is, in contemplation of the law, the act and declaration of all. 1 Greenleaf Evidence, sec. 111, 160; Cases *Ante.* 2 Stark Ev., 267; Phil. & Am. on Evidence, 304; *Ross* v. *Gould*, 5 Greenl. 204; Voss case, 3 Leigh R. 769; 2 Pothier Oblig. 256 (294) App. No. 16; Grant's case, McNaly's Evid. 385. See *Spears* v. *State*, 2 Ohio St. R. 583, as to confessions whether voluntary or not.

Now, up to the time of the alleged purchase of strychnine, there is not, at all events, evidence so far tending to prove the conspiracy as to justify the admission of declarations then made. As this question is for the court in the first instance, it is in the discretion of the court to reject it until a foundation is laid more distinctly tending to prove the conspiracy.

It will be an entirely different question as to declarations *after* the subsequent occurrences of that day, and before the death, provided they are not narratives of past occurrences. Questions like this rest somewhat in the discretion of the court, and necessarily so, as the object is to enlighten the jury by evidence which may be of such value as to be proper to form the predicate of a verdict. *Gandolph* v. *State*, 11 Ohio St. R. 118; *Moore* v. *State*, 2 Ohio St. R. 500.

As against Converse, and as showing the operations of his mind, many subsequent acts and declarations might be competent.—*Ib.*

The State then offered evidence tending to prove that, on the morning after Freet died, defendant said, "physicians have been sent for to open Freet. All the people in the world cannot make me believe that Freet poisoned himself."

VANDEMAN for State.—We ask the Court to permit chemical experiments to be made before the jury, to show the tests of strychnine.

By the Court.—Questions of science go to the jury on proof of facts and the opinions of experts. But scientific experiments would not enlighten the jury, since they might not have the knowledge to understand them, and hence they might be misled thereby.

In the great Michigan cases for burning a railroad depot, &c., in which Gov. Seward was counsel, experiments were made before the jury with a wooden implement, to test its capacity to communicate fire, being similar to that by which the fire was alleged to have been communicated. But that was not a question of science.

Witnesses frequently make experiments to ascertain if a fact alleged to have happened, or an act charged to have been done, were possible; and these, under peculiar circumstances, go to the jury on proof. *Smith* v. *State*, 2 Ohio St. R. 516.

Such experiments, not involving abstruse science, might perhaps be made before a jury. As to *Smith* v. *State*, 2 Ohio St. R. 516, see Nash's Digest, 195. A contrary rule was held in North Carolina.

A witness for the State having testified to frequent visits of Converse to defendant,

DELANO for defendant, on cross-examination, asked the witness to state what Wm. Freet had said to Converse, in the way of requesting him to make provision for, and attend to the wants of his family in his absence.

COATS objected.

By the Court.—The evidence is competent, so far as it is *information* or *solicitation* on which Converse may fairly be presumed to have acted. If Mary Freet were attacked or even threatened with assault from a dangerous man, and if Converse were informed of it he might properly visit her house to warn her of danger. In such case, the *information on which he acted*, is original evidence tending to show the good faith and motive of his visit. I know the main fact in this connection is defendant's motive, but that is affected by the motive of Converse as it appeared or was imparted to her; and hence the information on which he acted becomes proper. 1 *Greenleaf on Evidence*, sec. 101.

If Converse were employed by written contract as the agent of Freet, to provide for and visit his family, the fact of the agency would manifestly be proper. Now, it can make no difference that the employment was verbal. *Com.* v. *Bradford*, 9 Metcalf, 268.

The defence gave evidence tending to show that John Freet, father of deceased, [who testified that the mush and milk was left on the table,] had said that William Freet had thrown his cup of mush and milk out, and that the cat ate it and the next morning was found dead; that on another occasion John Freet admitted that Mary Freet had thrown the mush and milk into the slop-bucket, and that she had said the bitter taste in the mush was produced by hops boiled in the pot in which it was made; that John Freet said the mush and milk put in the slop-bucket was fed to the cow; that Freet said to Converse if he would agree to see to his wife, and get her wood, and corn for the hogs, and other things, he would be satisfied to go to the army; and Converse agreed to do so; and, subsequently, Freet did go to the army, from which he returned in November, 1862, and remained until he died; that a witness purchased strychnine at Dunefees store, in Unionville, about six or eight weeks before Freet died, to kill rats at his granary near there; that strychnine was used on other occasions that winter to poison rats about Unionville.

Saul Bland, a witness called and testified *for defendant:*

I reside in Pleasant township in this county. I was acquainted with Wm. Freet in his life-time. Have been acquainted with him three or four years. I can't tell when I last saw him, but it was only a few days before his death. I took dinner with him at his own house three or four days before his death. I knew he had gone into the military service. I shook hands with him and bid him good-bye when he started. At the time I took dinner with him, I had a conversation with him in regard to his returning to the service.

Question by defense.—What did he then tell you, in that conversation, about his intention to return to the army?

Objected to by the State.

Thereupon counsel for defendant stated to the Court, that they expected to prove by this witness that Wm. Freet told the witness, at that time, that he would never return to the army—that he would die in his own house first, before he would go back.

Walter H. Smith, for defendant, cited Roscoe's Criminal Ev.

23 note; *State* v. *Crank*, 2 Baily, R. 66; Wharton's Am. Crim. Law, sec. 1043; Wharton on Homicide, 216, 226.

A party indicted for murder committed by violence, may show that deceased made prior threats which would induce defendant to believe his own life in danger. *Monroe* v. *State*, 5 Geo. 85; *People* v. *Shorter*, 4 Barb. 460. In a Pennsylvania case cited in Wharton on Homocide, 227, the *general character* of deceased as a fighting man was admitted, though not particular instances of violence. See *Gandolpho* v. *State*, 11 Ohio St. R. 114.

When the public prosecutor, on the trial of an indictment for the murder of the prisoner's wife, in the absence of direct evidence of the alleged murder, offered, with other presumptive evidence, testimony to prove that for some months before and down to the time of the alleged murder, an adulterous intercourse subsisted between the prisoner and a Mrs. B. It was held that such testimony was admissible, not to prove the *corpus delicti*, but to repel the presumption of innocence arising from the conjugal relation. *State* v. *Watkins*, 9. Conn. 47.

On the trial of a prisoner for the murder of his wife, proof that the prisoner, during the year preceding the homicide, applied to the mother of a single woman for permission to visit her daughter, and was denied it because he was a married man, is admissible, to show a motive for the commission of the crime. *Johnson* v. *State*, 17 Ala. 618.

On the trial of A. for the murder of B., proof that A. had before murdered one C., and that B. was a witness of the murder of C. by A., is admissible for the purpose of showing the motive that induced A. to murder B., viz: the desire to destroy the evidence of his previous crime. *Rex* v. *Cleves*, 19 Eng. Com. Law. See, also, *Stout* v. *The People*, 4 Parker C. R. (N. Y.) 71; *State* v. *Hinkle*, 6 Clarke (Iowa) 380.

By the Court—It seems difficult to find any direct authority upon the question now made. There may be authorities indirectly applicable. Wharton on Homicide, 99; *Com.* v. *Bowen*, 3 Mass. R. 359; 2 Wheeler C. C. 321; 1 Greenleaf on Evidence, sec. 102, 108; *Reshton* v. *Nesbitt*, 2 M. & Rob. 252; Roscoe Cr. Ev. 23; *State* v. *Crank*, 2 Bailey, 66; *McLawney* v. *Coleman* 2 Stark R. 191; 1 Barn. & Auld. 90 S. C.; *Willis* v. *Barnard*, 8 Bing. 376; *Elsam* v. *Faucett* 2 Esp. 562; *Winter* v. *Wroot*, 1 M. & Rob. 404; *Gilchrist* v. *Bale*, 8 Watts 335; *Thompson* v. *Freeman*, Skin. 402; *Wetmore* v. *Mell*, 1 Ohio State R. 26; *Barthelemy* v. *The People*, 2 Hill N. Y. 248, 257; *Ridley* v. *Gyde*, 9 Bing. 349; *Boyden* v. *Moore*, 11 Pick. 362; *Walton* v. *Greene*, 1 C. & P. 521; *Reed* v.

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Dick, 8 Watts 479; *O'Kelly* v. *O'Kelly*, 8 Mete. 436; *Stiles* v. *Western*, R. R. 8 Mete. 44; *Doe* v. *Webber* 1 Add. & Ell. 773; *Rawson* v. *Haigh*, 2 Bing. 99, 104; *Marsh* v. *Davis*, 24 Vermont 363; *New Milford* v. *Sherman* 21 Conn. 101; *Ambrose* v. *Clendon*, Cas. Temp. Hardw. 267.

It is, of course, not doubted that if William Freet committed suicide, without the procurement of defendant, that would be a defense in this case. Whatever is competent evidence as tending to prove that, is admissable. Now, if Freet appeared in a gloomy mood, dispirited, and declared that he was weary of life, that would be competent evidence. Thus, it is said:

"Whenever the bodily or mental feelings of an individual are material to be proved, the usual expressions of such feelings made at the time in question, are also original evidence. If they were the natural language of the affection, whether of body or of mind, they furnish satisfactory evidence, and often the only proof of its existence. And whether they were real or feigned, is for the jury to determine." 1 Greenl. Ev. sec. 102.

And, says Greenleaf:

"So upon an inquiry as to the state of mind, sentiments or disposition of a person at any particular period, his declarations and conversations are admissible." Sec. 108, and see Greenl. Ev. sec. 110, note 2; *Bird* v. *Hueston*, 10 Ohio St. R. 418.

Similar evidence was admitted a few years since in the case of a woman tried in the Common Pleas of Miami county, for the murder of her husband by poisoning, though I do not know the circumstances under which it went to the jury—that is, that deceased made his will, and said he did not expect to live long, was received. In the absence of any case in point I will admit the evidence, but will feel at liberty to review this opinion whenever the question may hereafter arise. *Rex* v. *Taweil*, cited in Wills on Circumstantial Evidence, 180, 181; *Regend* v. *Johnson*, 2 C. & K. 354; *Little* v. *Loby*, 2 Greenl. 242; *Kimball* v. *Morrell*, 4 Greenl. 368; *Gorham* v. *Canton*, 5 Greenl. 266; *State* v. *Powell*, 2 Halst. 244; *Bennett* v. *Hethington*, 16 Serg. & Rawle. 193; 1 Stark Ev. 53. "It has been suggested by a learned writer that where a person comes forward and confesses the crime of which another is accused," such confession is admissible. 3 McCord's R. 332, note

But this has been denied as law. *Com.* v. *Chabbock*, 1 Mass. R. 144, note 203, top 336; Phil. Ev. P. 1 C. & H. notes 320.

The witness then stated that William Freet said in answer to a question when he was going back to the army, "I am not going back at all." Witness asked, "How are you going to help your self?" Freet said, "I am going to help myself—I will die in my own door yard before I will go back;" that he received a letter from the Captain of his company urging him to return to the army; that he was informed by a Lieutenant of his company that the Attorney General of Ohio and counsel had said that he must return to the army, and that he turned pale when this was announced to him. Freet said he had never been mustered in nor sworn in, and had not drawn any pay. There was other evidence that he had never been mustered or sworn in.

Defendant gave evidence to show that Converse, on 13th February, had business connected with a garnishee proceeding in Columbus on that day, and went there to see to it; that another druggist, about that time, sold strychnine to a person who in some respects resembled Freet, in others not, but who did not resemble Converse.

That defendant's general reputation and character as a peaceably disposed woman was good.

Freet was aged about 27—defendant near the same age.

The evidence relating to the symptoms, post mortem appearances, and chemical examination, was as follows:

Wm. H. Cartmell—I am a physician; was acquainted with Wm. Freet; saw him last on the 13th Feb., 1863; was called to see him at his house about half past nine o'clock in the evening, as near as I can guess. I found him prostrated; lower extremities in a very rigid condition; hurried respiration; difficulty of breathing; his arms thrown over his head and clenched to the banister of the bed. He appeared to be very nervous; much paralyzed; was jerking; his head was hot; his breast and head covered with profuse perspiration. He conversed freely; talked rational, and called for help, said he was going to die; wanted

help. I tried to give him some medicine; when I went to raise his head, he said not to touch it as he did not know whether he could swallow, but he would if he could. He then went into a severe spasm or convulsion—jerking—which lasted from five to ten minutes I think. He then became quiet and conversed rational. I asked him if he was not better, and he said not; that he thought he was going to die; was taking lock-jaw. I asked him if he could take more medicine. He said not; he could not swallow. For a few moments he was quiet and then went into another convulsion, with his head thrown around, and said, "that is the matter of the horse—I am gone." He then went into another convulsion and died quietly; the last convulsion was easy. I think he died in from three quarters to one hour after I first saw him. There was no time-piece in the room. Freet's father was there administering cloths of cold water to his head. He repeated several times, the remark that he was going to die; at least five or six times. Several persons were in the house. Mrs. Freet, the defendant, was there, and Mrs. Holycross was there. The defendant put some cloths to his feet; he said they eased him he thought. He wanted the cloths as hot as they could be borne. Their little boy was lying on a bed in the room. Some one said to the defendant, Mary, Mr. Freet is dead; she replied, is he? She was lying on the foot of another bed; she was there for some fifteen minutes before he died. His head was thrown back as far as he could get it. From the symptoms, and what I saw at the post mortem examination, I think he came to his death by poison.

Aaron D. Doolittle—I knew the deceased for a year or two; saw him alive on 13th Feb, 1863, about 10 o'clock A. M.; he was then on the street. I was called about 10 o'clock that night to lay him out; he was dead. His body was stiff, and in such a condition as I never saw a human body before. His fingers were so stiff that I raised up the body before they would yield. The body was warm. When I first saw him he was lying flat upon his back; he was lying very straight, but his back was bent a little.

Martin Pyers—I saw Wm. Freet about 9½ o'clock the night he died. He was in great agony. He died in from three quarters to an hour after I first saw him. He did not want me to touch his feet. He said, "this puts a man in mind of dying." He had several spasms. The last one he had was very light; the last words he spoke were, "I am dying." When he was dead his body was cold and stiff as a log.

John Freet—I am the father of the deceased. The last time I saw William alive was on the 13th Feb., 1863, at his own home; he was lying on a bed dying. I went to the house about 9 o'clock that evening; he was sitting on a bed playing with his child. He took a dose of medicine about 9 o'clock; the defendant gave him the medicine, and a short time afterwards gave him a bowl of soup. I laid down and went to sleep. I think I had laid down about half an hour. The first I heard was a loud scream. I jumped to my feet and then heard another scream. I went to the bed and called to his wife to help me. I told him not to call so loud, it would arouse the neighbors. At this time the door opened, and some of the neighbors came in. He called for help, and called for a doctor. We had sent for Dr. Converse and Dr. Cartmell. He was in a spasm when Dr. Cartmell came in; the Doctor gave him some medicine. I went after Lothrop Converse. He died that night between 10 and 11 o'clock. During that day William had complained of pain in the back, shoulders and head. Dr. Converse was there late in the afternoon; he left some medicine for him; I did not see him take any medicine except what she gave him; I had lived there some two or three weeks. I saw defendant rolling out some dough, and asked her what she was doing it for; she replied that she was making some wafers to give William some medicine in.

On the 3d or 4th of Feb., at breakfast, William asked his wife if she had used all the coffee that morning, and said that his coffee was so strong that he could not drink it; that it tasted bitter; just like quinine. I said that mine tasted good. He said, if you

do not believe it just take the cup (which he handed to her) and taste it. She took the cup, and whether she tasted it or not I cannot say, but she handed it back to him, when he said, hand me a cup of water; he finished his breakfast with water. In the evening we had mush and milk for supper. The mush was put in a plate in the centre of the table, and a dish of milk was put at each person's place at the table. The third or fourth mouthful he eat, he said he could not eat the mush and milk, as it tasted so bitter. He eat no more, but got up and left the table. I remarked to him that he must have a singular taste; that this morning he complained of the coffee, and now of the mush and milk, and that I could not taste anything wrong, except the mush and milk was bitter with salt. No one except his wife prepared food for the family. We had a brindle cat about the house; she had black stripes, and was greyish between the stripes. I do not know what became of the cat, but heard a conversation between defendant and Mrs. Humpshire, when one of them remarked to the other that the cat was dead and stiff out by the side of the house. This conversation was on the morning after we had the mush and milk for supper.

Dr. Jeremiah Converse—I am a physician and surgeon. I was not acquainted with William Freet until about 12 hours before his death, when I received a call to visit him professionally. He was then laboring under what I took to be the premonitory symptoms of pneumonia. I considered it a very mild attack. This was on the 13th Feb., 1863, betwen 2 and 3 o'clock P. M. I prescribed for him six powders, each containing three grains of Dover's powder and one grain of calomel; one powder was to be taken every three hours, beginning at 3 o'clock. I also left him three grains of tartarized antimony, to be dissolved in six ounces of water; a portion of this solution was to be taken between each of the powders. Defendant asked me if it would be as well to give the powders in wafers; I told her it would. This is a very

common way of giving medicine. These wafers are made by taking flour and making a batter, and then dropping this on a hot flat-iron. None of the medicine that I prescribed was given in my presence. If a wafer is properly made, it entirely conceals the taste of medicine. I don't know but I said to the defendant that she might administer the medicine in water. I was not particular as to how the medicine was given. I simply consented to giving it in that manner. I told Wm. Freet that the medicine I left him was sufficient without any further visit. I suppose the wafer would retard the digestion of the medicine. The next time I saw him was about a quarter before 12 o'clock; he was dead. I made no examination of the body at that time.

The next time I saw the body was on the 15th inst., forty hours after death; we then made a post mortem examination. Externally there was ecchymosis of the skin, swelling of the face, neck and chest, and, more or less, of the whole body. The upper extremities were relaxed, but the lower extremities were rigid. The spine was curved; the toes were drawn back toward the body; the feet were concave; I cannot say positively as to the condition of the hands; the muscles of the neck were rigid; the stomach was in a healthy condition; the pyloric orifice was a little inflamed, but not sufficient, I think, to produce any serious difficulty; there was softening of the mucous membrane, but in other respects the organ was healthy. The contents of the stomach were small in quantity and had a tarry appearance. The heart was natural and in a healthy condition. The blood was in a fluid state and had a dark color. The bowels were in a healthy state, as also the bladder, which contained about two ounces of urine. The spleen was engorged with blood, but was healthy; the liver was in the same condition—it was engorged with blood; the lungs healthy and engorged, especially the lower portions. The brain was healthy, but there was a want of blood. All the blood found in the body was in a fluid state. The stomach

and contents were placed in a glass jar; the heart and some blood in another; and the bladder and its contents in another. These jars were then sealed, labeled and delivered into the hands of the coroner of the county. From the post mortem appearances, I should think that death was not produced by any ordinary disease.

Dr. T. J. Haynes—Have been a physician and surgeon for ten years. Was present at the post mortem examination of William Freet, February 15, 1863. There was considerable ecchymosis of the skin; body stiff; hands drawn in; toes drawn upwards; general tumefaction of the body; the neck and chest puffy; head laid natural; the lower extremities were stiff, but the arms relaxed. The bowels were healthy; the stomach contained a little thick liquid; the pyloric orifice was somewhat irritated, the cardiac not so. The stomach contained about two ounces of fluid. The stomach and contents were taken out and placed in a clean jar. Lungs engorged with dark liquid blood, but found no diseased action; the liver engorged with similar blood; the heart normal in size and collapsed, valves healthy; no blood in the heart, but the ascending vein had been cut. The kidneys and bladder were healthy; brain healthy, but there was an absence of blood in this organ.

Dr. Wm. Ballinger—I have been a physician for the last seven years. Saw the body of Wm. Freet on the evening of February 14, 1863. Saw three or four powders, which I judged to be a mixture of Dover's powder and calomel; I found them in Freet's house; took charge of them and delivered them to the coroner. I assisted to make the post mortem examination. All the internal organs examined were in a healthy condition. The blood throughout the body was of a dark color and fluid. The heart and its valves were in a healthy condition. There was an absence of blood in the brain, but the organ was healthy.

Wm. Cartmell—I am coroner for this county. Was present at the post mortem examination of the body of Wm. Freet; the jury was also present. The organs were placed in clean glass jars. I

carried the jars and their contents to Columbus, and there delivered them to Professor Wormley.

J. Humpshire—Saw Wm. Freet on the night of his death; he was very sick. He hallooed so that he could have been heard at a great distance. After death his body was perfectly stiff—so stiff that by raising a part of the body the whole raised.

Wm. Dunfee—About a week after the death of Wm. Freet, I found a cat in the alley back of his lot. I put the cat in a box and kept it some days. I helped Dr. Hamilton to cut the cat open and take out the internal organs.

Dr. I. N. Hamilton—About the 14th of March, 1863, I dissected a cat given me by Mr. Dunfee. The cat was of a greyish color, with black or brown stripes over the shoulder. I took out all the internal organs except the kidneys, and put them, with the blood, which was fluid, into a glass jar. I gave the blood no special examination, except that I know it was liquid. The cat was frozen stiff. I had seen Mrs. Freet's child playing with a similar cat. I delivered the jar to Prof. Wormley, of Columbus.

Prof. T. G. Wormley—I reside in Columbus, Ohio. By profession I am a physician and chemist. Have been Professor of Chemistry in Starling Medical College for the last several years. Have devoted the last ten or fifteen years to the study of chemistry; part of the time to the study of general chemistry, but the last several years to the special study of the chemistry of poisons. On the 16th of February, 1863, the coroner and prosecuting attorney of Union county, Ohio, called upon me at my laboratory and delivered to me these three jars. (The jars were here produced.) These contained different portions of animal structures, and some fluid. One of them contained a human stomach and from two to three ounces of thick fluid. Another contained a heart, together with a small quantity of blood. The third contained what appeared to be a human bladder, with a quantity of urine. These jars were all carefully sealed. I also received at the same time a

small package, which enclosed two papers, one of which contained a white powder; the other, three separate powders, having a brownish color.

Examination of the Stomach.—The stomach was removed into a large porcelain evaporating dish and cut open. The mucous membrane presented several patches of congestion; independent of these the organ appeared quite healthy. The liquid remaining in the jar was then decanted into the dish containing the tissue of the stomach. There was, in all, between two and three fluid ounces of liquid; it was thick and had a dark color. This mixture was then stirred with a few fluid ounces of pure distilled water. The mixture had a decided acid reaction. I then cut the tissue of the stomach into small pieces, then added about forty drops of pure acetic acid, and thoroughly stirred the mixture; then added several ounces of distilled water and a few ounces of pure concentrated alcohol, and again stirred. This mixture was then digested at a moderate heat, for about one hour and a half, allowed to cool, then strained through new and thoroughly washed muslin, and the solids upon the strainer well washed with water containing alcohol. This operation furnished about ten fluid ounces of highly colored, turbid liquid. This was several times strained, and ultimately furnished a clear colored fluid. All the solid matters, separated by these several strainings, were carefully collected and preserved for future examination, if necessary. The clear liquid was now concentrated to about four fluid ounces, and again strained to separate some solid matter which had separated during the concentration. It furnished a nearly clear liquid, which measured four ounces. I now tasted a *very small drop* of this liquid, but observed nothing except a very peculiar animal taste, which was so very offensive that the operation was not repeated. The four ounces of liquid were now concentrated on a water bath, then stirred with alcohol and the mixture filtered through filtering paper; this operation of concentrating and treating with alcohol

was repeated several times, when the liquid finally became clear and nearly colorless. It was then evaporated at a very moderate heat, on a water bath, to about two fluid drams; this was well stirred with about a dram of pure water, containing a few drops of pure sulphuric acid, and the mixture filtered.

The liquid thus obtained was rendered distinctly alkaline by means of a solution of pure caustic soda, and the mixture violently agitated for several minutes in a strong glass tube, with about twice its volume of pure chloroform. Any strychnine present in this mixture would now be dissolved by the chloroform; the object of the addition of the caustic soda was to set the strychnine, if present, free from its combination with the acids which had previously been added, and thus render it insoluble in water; the acids had previously been added for the purpose of rendering it soluble in water. Upon allowing this chloroform mixture to repose, the chloroform after a little time subsided to the bottom as a clear, colorless liquid; while the alkaline fluid floated upon the surface. The chloroform solution was now carefully removed from the alkaline liquid by means of a pipette, and the alkaline liquid washed with about its own volume of fresh chloroform, which, after subsidence, was removed and transferred to the first chloroform mixture. The chloroform mixture was nearly or altogether colorless, but presented a slight milkiness, to remove which the liquid was passed through a small filter and received in a large watch-glass. It was now evaporated spontaneously to dryness, when it left a few grains of solid, amorphous residue. A very small portion of this residue had an intensely bitter taste, similar to that possessed by strychnine. This test was applied to several successive small portions with precisely the same results. Another very small portion was transferred to a small watch-glass, and treated with a small drop of pure, colorless, concentrated sulphuric acid, in which it dissolved without any marked change of color. I then added to this solution a small fragment of a crystal

of pure bichromate of potash, and after a few moments stirred it through the drop by means of a glass rod. This gave rise to a distinct coloration, which presented, for a moment, a very indistinct mulberry shade, but nothing characteristic of the presence of any particular poison. Another very small portion of the residue was dissolved in a drop of pure sulphuric acid, and then a minute quantity of pure strychnine added to the mixture; upon stirring a small fragment of bichromate of potash in this mixture, it did not develop any colors indicative of the presence of the strychnine added. This experiment proved that the original residue contained too much foreign matter to detect the presence of strychnine, if present, by means of the color test.

The remaining portion of the chloroform residue was then well stirred with several drams of pure water, containing three drops of acetic acid, and a very small quantity of absolute alcohol. A very marked quantity of the residue remained undissolved. The mixture was now filtered, and the filtrate evaporated at a very moderate temperature to about six fluid drams. This was clear, but had a slightly yellow color, and slightly acid reaction. A very minute drop of this liquid had an intensely bitter taste. Another drop was transferred to a small watch-glass and evaporated to dryness on a water bath, when it left a distinct, gummy residue. This was treated with a very small drop of pure concentrated sulphuric acid, in which it dissolved without any marked change of color. I then stirred in this solution, by means of a glass rod, a very small fragment of a crystal of bichromate of potash, when it developed a series of colors peculiar to strychnine, beginning with a deep blue, momentarily passing into purple, which soon becomes purplish red, and ultimately red, which, after a time, disappears. This constitutes what is known as the "color test" for strychnine. It is impossible to convey in words a full description of this series of colors; their intensities and duration are much modified by several circumstances, such as the quantity and purity of the strychnine operated upon, and the

relative quantities of acid and bichromate used. Yet, any one conversant with the colors developed by strychnine when acted upon by this test, could not possibly confound them with the reactions of any other known substance. Under the conditions under which this test was applied, the results could not have been due to any known substance except strychnine.

It has been objected that narceine, pyroxanthine, papaverine, salicine, cod-liver oil, and some few other substances, yield with this test reactions which might be confounded with those of strychnine; but these objections have no foundation whatever in fact, when the test is properly applied by one who is at all conversant with the séries of colors developed by strychnine. Between the substances mentioned and strychnine there is this essential difference: that they yield colors when acted upon by sulphuric acid alone, whereas, strychnine dissolves in this acid without any change of color, and the solution remains colorless until the addition of the bichromate of potash, when the series of colors peculiar to strychnine are developed. Even if the sulphuric acid and bichromate were added in combination the colors developed by neither of these substances, except perhaps that of cod-liver oil, could be confounded by any one having even a limited experience, with the colors due to the presence of strychnine. Aniline, which is a rather rare *liquid* substance, will unite with certain acids to form colorless solid salts, which, like strychnine and its salts, dissolve in sulphuric acid without change of color, and the solution, when treated with a crystal of bichromate of potash, after a time assumes a deep blue color. But in this case the bichromate produces no immediate change, and it is only after a time that the mixture assumes a greenish-blue tint, which slowly passes into a deep blue, which is permanent, or, at least, lasts for many hours. In this respect, therefore, the salts of aniline differ entirely from strychnine, in which the blue color is developed immediately, and lasts but for a few moments, and then the mixture quickly passes through a seriés of colors, which, taken

together, are characteristic of this poison. Moreover, a salt of aniline could not have been present in the residue examined, because the original solution, previous to being agitated with chloroform, was rendered distinctly alkaline by means of caustic soda, by which any aniline salt, if present, would have been decomposed, and liquid aniline set free; and even if there had been undecomposed aniline salt, this would not have been dissolved in the chloroform used, as it is insoluble in this liquid. I have a specimen of *woorara*, frequently called South American arrow poison, which I find contains a principle which yields, with the color test, results very similar to those of strychnine, although it does not contain this substance. This woorara dissolves slowly, but not entirely, in concentrated sulphuric acid, with a more or less red tint, depending upon the quantity dissolved; when a small crystal of bichromate of potash is stirred in this solution it yields, after a little time, a series of colors very similar to those of strychnine. The only difference I have observed is, that the colors do not appear as promptly as in the case of strychnine, and they are not preceded by as rich, deep blue, as when pure strychnine is used. In this latter respect, however, it corresponds to the behavior of a residue of strychnine contaminated with foreign organic matter. When, however, we dissolve a chloroform extract of this substance in concentrated sulphuric acid, or take an alkaline solution, in which the active principle of this substance is much more soluble than in chloroform, and render this strongly acid with sulphuric acid, and stir in the mixture a crystal of bichromate of potash, it immediately yields a series of colors precisely similar to that produced with solutions of pure strychnine. I have never succeeded in obtaining the active principle of this substance in the crystalline form. It is but sparingly soluble in chloroform, but dissolves freely in alkaline liquids. Strychnine is freely soluble in chloroform, but is insoluble, even in strong solutions, of the alkalies, except ammonia, in which it dissolves

very sparingly. Woorara is an exceedingly rare substance. It has an exceedingly bitter taste, which, I think, differs in character from that of strychnine. It is a vegetable mixture, prepared by the South American Indians, and used by them for killing game. It affects the system very rapidly when introduced into the circulation, but has little or no effect when taken into the stomach. I have given it in comparatively large doses to inferior animals without any apparent effect; but when introduced under the skin, even in very small quantity, the animals would fall very speedily. Its physiological effects are totally different from those of strychnine. I made the experiments with this substance long before my connection with this case.

I will now proceed to detail the further examination of the six drams of liquid obtained from the treatment of the stomach and its contents.

Another drop was taken from this solution and placed in a watch-glass, and there treated with a strong *solution* of bichromate of potash. This yielded no immediate change, but after a little time small square crystals began to separate, which, after a short time, became very abundant. In this respect the mixture behaved precisely as a solution of strychnine of a certain degree of concentration would under like circumstances, and wholly unlike a solution of woorara. A strong solution of woorara yields with a solution of bichromate of potash a precipitate, but I have never succeeded in obtaining it in a crystalline form. The liquid was then decanted from these crystals, and they treated with a drop of concentrated sulphuric acid, when they immediately assumed an intense blue color, which soon passed through the series of colors peculiar to the crystals of strychnine under like circumstances. The amorphous precipitate produced from solutions of woorara by a solution of bichromate of potash, when treated with sulphuric acid passes through precisely the same series of colors as that from the crystalline strychnine deposit. From the experiments now made I have no doubt whatever, of the presence of strychnine in the stomach examined.

The balance of the six drams of fluid from the stomach was now evaporated at a very moderate temperature to about one fluid dram; this was rendered distinctly alkaline by means of a solution of caustic soda, and the mixture violently agitated for some time with about twice its volume of pure chloroform. After repose, the chloroform was carefully separated, and the alkaline liquid washed with about its own volume of chloroform, which, after separation, was mixed with the first chloroform liquid. The mixed chloroform was now evaporated spontaneously in a watch-glass, when it left a residue consisting almost entirely of crystals having the same form as those of pure strychnine. These were carefully dried on a water bath and weighed. They weighed $\frac{1}{100}$ of a grain.

The smallest fragment of one of these crystals, when examined by the color test, showed conclusively that they were composed of strychnine. A very small portion of the amorphous matter present, when examined by the same test, showed that it also contained strychnine. A portion of the crystals was now dissolved in a few drops of water containing a trace of acetic acid, and the solution examined by the following tests: 1. One drop of the mixture was treated with a small drop of a solution of bichromate of potash, when it furnished a crystalline precipitate having the same form as that produced by strychnine; and which, when treated with sulphuric acid, developed the series of colors peculiar to strychnine. 2. Another drop was treated with a solution of ferricyanide of potassium, when, after a little time, it yielded a crystalline precipitate similar to that from strychnine; and which, when treated with sulphuric acid, underwent the change of colors characteristic of strychnine. 3. Another drop treated with a solution of carbazotic acid yielded a crystalline precipitate similar in form to that produced from strychnine. This test within itself was not characteristic of the presence of strychnine. 4. The last drop was treated with a solution of caustic potash which yielded a crystalline precipitate similar to that from strychnine; and which,

when treated with sulphuric acid, and a small crystal of bichromate of potash proved to be strychnine.

These tests prove, beyond a question of doubt, the presence of strychnine in the stomach examined, and that I recovered about $\frac{1}{100}$ of a grain of the pure poison from that organ. The remaining portion of the crystals was then scraped from the watch-glass and introduced into the small glass tube which I here present. The deposit in the watch-glass was examined by means of a microscope, which revealed that it consisted almost entirely of crystals having the same form as those assumed by strychnine under like circumstances. The precipitates produced in all these experiments were examined by means of the microscope. It is the only way to determine the form of deposits under these circumstances. There was undoubtedly some strychnine lost during my manipulations previous to weighing the residue. I had used some little in the application of the previous tests. My object in making the second chloroform purification, was not for the purpose of ascertaining whether strychnine was present, for that had been already proved, nor to learn how much I could absolutely recover, but for the purpose of obtaining it in as pure a state as possible. Frequently in the examination of as complex organic mixtures as the contents of a stomach we cannot detect the presence of strychnine, especially when present in small quantity, until after we have made the second chloroform purification. A portion of the residue contained in the tube, examined quite recently, showed that it had not undergone decomposition. The watch-glass from which I removed this residue was washed with a very small quantity of water, which I have here in this small tube. I can show the presence of strychnine in a single drop of this solution. This concludes the chemical examination of the stomach and its contents.

Examination of the Heart and Blood.—The contents of the ja containing the heart and blood were next examined. The blood was in a fluid state. I added to the mixture twelve drops of con

centrated sulphuric acid, and after agitation, decanted the blood which measured a little over one fluid ounce. The heart was then washed three different times, using for each washing two ounces of slightly acidulated water; after which, it was washed with two ounces of strong alcohol. All these washings were mixed with the blood in a large porcelain evaporating dish. The heart was then removed from the jar and carefully examined in regard to its physical condition, but no diseased action whatever was detected. The contents of the evaporating dish were maintained at a moderate heat for about half an hour; during this time the mixture was very frequently stirred. The cooled mixture was thrown upon a clean muslin strainer; the liquid passed through clear but had a deep reddish color. A large quantity of coagulated matter remained upon the strainer; this was well washed with warm acidulated water, and the washings added to the liquid obtained by the first straining. These mixed liquids were again strained, and then concentrated at a moderate heat to about four fluid ounces, again strained, and then evaporated to less than a fluid ounce. This, after standing for several hours, was mixed with strong alcohol, filtered through paper, and the filtrate evaporated to about one dram; this was again mixed with strong alcohol, filtered, and again evaporated to a small volume.

This was slightly diluted with water, the mixture rendered alkaline with caustic soda, and then agitated with about two volumes of chloroform; after this had separated it was removed, and the alkaline solution washed with more chloroform. The mixed chloroform was allowed to evaporate spontaneously; it left a small, yellowish, gummy residue. This was dissolved in a small quantity of water containing a drop of acetic acid, the solution filtered, then rendered alkaline with soda, and again agitated with a few volumes of chloroform. This upon spontaneous evaporation left a small, gummy residue. A small portion of this had a distinctly bitter taste. It was then treated with a small quantity of

acidulated water, filtered, and evaporated to dryness. A small portion of this residue, examined by the color test for strychnine, gave an indistinct purplish coloration; the remaining portion examined by the same test, gave a distinct purplish coloration, which speedily disappeared. This coloration was similar to that produced by minute portions of strychnine when mixed with foreign organic matter. The tissue of the heart was not examined chemically.*

Examination of the Urine.—The third jar that I opened contained the bladder and about two fluid ounces of bloody urine. A few ounces of pure water were added to the contents of the jar, and the mixture acidified with acetic acid; it was then decanted into an evaporating dish. The jar and the tissue of the bladder were then washed with a few ounces of water, and the washings added to the acidified urine. The liquid thus obtained was then treated essentially after the manner described in the treatment of the liquid obtained from the stomach and its contents.

The first chloroform residue had a bitter taste; a small portion examined by the color test for strychnine, gave no distinct evidence of its presence. The remaining portion of the residue was dissolved in acidulated water, rendered alkaline with caustic soda,

* Knowing all the circumstances I have no doubt but the above coloration was due to the presence of strychnine; yet it is remarkable that it was discovered in so small a quantity of the blood. I am under the impression that this would rarely occur in cases of poisoning in the human subject. From the same amount of blood taken from cats, recently poisoned by this substance, we have as yet never failed, by following the above process, to detect the poison, but here that quantity of blood constitutes about the whole of the circulation. It does not follow that a given quantity of blood taken from the human subject in poisoning by this substance, would contain as much strychnine, as the same quantity taken from a poisoned cat. In fact there is much less difference in the fatal dose for a cat and that for the human subject, than in the quantity of blood contained in these animals.

and extracted a second time by chloroform. The residue left upon the avaporation of this, when examined by the color test for strychnine, gave satisfactory evidence of the presence of that poison. The whole of the residue was consumed in the application of this test.

Examination of the Powders.—At the time I received the above jars, I also received two packages of powders; one of which contained a single powder, the other three separate powders. The single powder, which I here present, was labelled "A portion of Doct. Converse medicine—Doct. Haynes." This powder was white, and, when examined under the microscope, was found to consist of broken crystals. I then examined a portion of it, by the color test for strychnine, but it furnished no evidence whatever of the presence of this poison. Another portion was dissolved in acidulated water, and a stream of sulphuretted hydrogen gas passed into the solution; this gave a brick red precipitate, which indicated the presence of antimony. The three powders contained in the other package had each a brown color. I here present these powders. A portion of these was examined for strychnine, but this poison was not present. There was no further examination of the powders made.

All the organs examined in this investigation, had the appearance of those of an adult individual. During the examination, the greatest possible care was taken in regard to the purity of the reagents and apparatus used, and that no foreign matter should be introduced into any of the mixtures.

Examination of the Cat.—By request of the prosecuting attorney of this county, I obtained from Doctor I. N. Hamilton, on the 31st of March, 1863, in this court room, a glass jar, wrapped in paper. It was carefully sealed and contained the internal organs of one of the smaller animals, together with some liquid blood. I carried the jar and its contents to my laboratory, in Columbus, and there examined it.

The blood was decanted from the jar and measured ten fluid drams. The organs were then washed with distilled water containing acetic acid, and the operation repeated two or three times. These washings were added to the blood. The organs were then removed from the jar, placed in a large dish, and examined physically. They corresponded to the internal organs of a cat, except that the kidneys were not present. I am quite familiar with the internal organs of this animal.

The Blood.—To the mixture of the blood and washings obtained from the jar, I added a small quantity of absolute alcohol, and several drops of concentrated sulphuric acid. This mixture was gently heated for some time, allowed to cool, strained, and subsequently treated in essentially the same manner as described in the examination of the blood obtained from the human heart.

The first chloroform solution, when evaporated spontaneously, left a slight gummy residue, which had a distinct bitter taste. This residue was dissolved in water acidulated with acetic acid, the solution filtered, rendered alkaline with caustic soda, and the mixture agitated with chloroform. This upon spontaneous evaporation left a slight residue. A portion of this was examined by the color test for strychnine, with equivocal results. A second portion, examined by the same test, gave indistinct evidence of the presence of this poison. The balance, and much the larger portion, when examined by the same test, gave very distinct evidence of the presence of strychnine.

The Stomach.—I next separated the stomach from the other organs, placed it in a dish, and cut it open. It contained a small quantity of a thick mixture of liquid and solid matters. Scattered through this mixture were a number of small lumps of solid matter, having a yellowish color, and about the consistence of mush. A number of these lumps were collected together and washed in pure water. A portion of these examined under the microscope presented the appearance of broken up cells and frag-

ments of vegetable structure. When examined beside a specimen of recently prepared mush, I could detect no difference whatever in their microscopic characters. A number of these lumps, examined by a solution of free Iodine, proved to be composed principally of starch. I then placed a portion of the washed mush-like matter upon a piece of paper, allowed it to dry, then introduced it into this tube, which I here present, with its contents. In drying, this matter changed somewhat its physical appearances and color. Upon moistening it with water, it assumes its original appearance and color. There was in all about, or perhaps less, than a tea-spoonful of this matter. The lumps varied in size from that of a head of a pin to that of a small pea. Those contained in the tube are about an average size. The remaining portion of this matter, together with the other contents of the stomach, were mixed with several ounces of water and the mixture decanted from the tissue of the stomach. This mixture was strongly acidified, mixed with strong alcohol, and then treated much after the same manner as described in the examination of the contents of the stomach obtained from the first jar examined.

The residue from the first chloroform used, had a bitter taste, and, when examined by the color test, gave very distinct evidence of the presence of strychnine. A portion of the residue not used in this examination, when purified a second time with chloroform, gave very satisfactory evidence of the presence of strychnine. The whole of the residue was consumed in this last examination.

The remaining organs, obtained from the jar, were then cut into small pieces and examined together. The first chloroform residue obtained from these was dissolved in acidulated water, the solution rendered alkaline with soda, and the mixture again agitated with chloroform. This, upon evaporation, left a very gummy residue, a portion of which, when examined by the color test, gave no evidence of the presence of strychnine. Another portion was mixed with a very small quantity of pure strychnine, and then

examined by the same test, when it failed to show the presence of the strychnine added. This experiment was resorted to for the purpose of ascertaining whether the failure of the former test was really due to the absence of strychnine, or whether it might not be due to the presence of foreign matter. It proved that there was present some matter which prevented the test revealing the presence of strychnine, even when present in notable quantity. It not unfrequently happens, when operating upon very complex mixtures, such as the above, that the chloroform extracts foreign matter which prevents the action of the color test. If there is a marked quantity of strychnine present, these impurities may be separated by subsequent purifications with chloroform. No further examination of the remaining portion of the above residue was made. There was but a small quantity left. This closes the examination of the parts submitted to me for chemical examination.

In its pure state, strychnine is a white crystalline solid which has an intensely bitter taste. This bitter is so intense that most persons will recognize the taste of the 50,000th part of a grain when dissolved in one grain of water. The first effect of a poisonous dose of strychnine, or its salts, is generally a sense of difficult breathing and a feeling of suffocation; this comes on sometimes very suddenly. This is soon followed by a trembling or twitching of the extremities, then convulsions of the whole body. During these convulsions the extremities become rigid, the respiration arrested, the face suffused with blood, the head thrown back, the body stiff; often the body rests upon the head and heels. The hands are clenched, the toes drawn back, and the soles of the feet arched. The jaw is frequently fixed, but this does not usually appear until after rigidity in other parts; sometimes the jaw is not fixed. This condition may continue for a few moments or for some minutes, after which the body becomes relaxed. During the interval the mind is generally clear; most frequently the patient is able to converse; there is frequently a sense of dissolution, an-

often the patient has exclaimed "I shall die," or used some similar exclamation. Subsequent paroxysms are frequently induced by slight causes, such as a sudden touch, a current of cold air, or a sudden noise. The paroxysms, in fatal cases, follow each other at short intervals. The patient generally dies in a relaxed condition soon after one of these severe paroxysms, but they may die in one of these spasms, and the body retain the position induced by the convulsion. In poisoning by strychnine, the patients have frequently desired to be rubbed.

The time at which the symptoms first appear is subject to considerable variation. In some instances they have appeared within a few minutes after the poison was taken, while in others they have been delayed for an hour or more; in one recorded case they were delayed for two hours and a half. Perhaps in the majority of cases they appear in from ten minutes to half an hour. The time at which the patient dies is also subject to considerable variation. Death has taken place in ten minutes after the poison was taken, while it has been delayed as long as six hours. The time seems to have little or no relation to the quantity taken. One of the most rapidly fatal cases yet recorded, resulted from the smallest dose yet known to have proved fatal to an adult. The quantity taken was half a grain; the same quantity has proved fatal to an adult in at least one other case. In a case in which life has been prolonged to the greatest period yet known, the quantity taken was three grains. In several fatal cases the quantity taken was less than one grain; in several instances persons have recovered after taking some grains; in one instance a person is said to have survived the effects of seven grains. In most instances, from one to two grains would prove fatal to an adult.

Strychnine seems to act principally upon the nerves of motion. By producing spasm of the muscles of respiration, it prevents the admission of air to the blood. I cannot say what its direct effect upon the spinal cord is. It seems to manifest its effects through

the spinal cord. I know of no post mortem appearance peculiar to poisoning by strychnine. There is generally congestion of the lungs and brain; sometimes the membranes of the stomach are more or less congested in patches, while at others there is no abnormal appearance. The blood throughout the body is generally fluid and of a dark color. The body is usually in a more or less rigid state. None of these conditions are peculiar or characteristic of poisoning by strychnine; any of them may result from other causes. I mean that no post-mortem examination would enable me to say that death was caused by strychnine; the same appearances might be induced by other causes. I know of no substance except strychnine that could produce all the symptoms you have stated; from such symptoms I should at once infer that the patient was laboring under the effects of strychnine.

By following the method pursued in the examination of the blood in this case, it is usual to detect the presence of the poison in cases of poisoning by it, if sufficient blood is used for the examination. There have been frequent failures to detect the poison in the blood. I have applied this method, with slight modification, to the examination of the blood of eight different animals poisoned with strychnine, and never failed to detect its presence. The color test, when properly applied to the examination of a white crystalline substance, is open to no known fallacy. When there was sufficient material on hand, I would always apply other tests. When a solution yields, with a solution of bichromate of potash, a precipitate having a certain crystalline form, which, when treated with concentrated sulphuric acid, yields a certain series of colors, there is no doubt whatever, but the solution contains strychnine. There is no other substance known that will yield the same results. The same is also true of a solution that yields a crystalline precipitate with ferricyanide of potassium, which, when treated with sulphuric acid, furnishes a similar series of colors. In the examination of the cat, the presence of strych-

nine was predicated upon the reaction of the color test and the taste; there was not sufficient recovered to apply any other tests. Strychnine, when introduced into the stomach, gets into the system by absorption. It is certain that I did not recover *all* of the strychnine present in the different parts which furnished it upon examination.

Cross Examined.—The chemicals and materials used for the preparation of the different parts for examination by the tests, were distilled water, absolute alcohol, strong alcohol, acetic acid, sulphuric acid, caustic soda, and pure chloroform. The reagents used for testing were sulphuric acid, solid bichromate of potash, a solution of bichromate of potash, carbazotic acid, ferricyanide of potassium, and a solution of caustic potash. Except in one of the examinations, no reagents were used, other than sulphuric acid, and solid bichromate of potash. None of these reagents were introduced into the mixture, but only applied to separate parts of it. I obtained from the stomach, after applying several tests, 18-100ths of a grain of strychnine. I would not venture an opinion as to how much of the poison was lost in its separation from the stomach. The fifth part of a grain dissolved in four ounces of *pure* water, would furnish a distinctly bitter solution. No one, under ordinary circumstances, could take this solution without being conscious of its taste. This mixture would form about a 10,000th solution; that is, there would be one part of strychnine in solution in about 10,000 times its weight of water. The extent to which a solution of this substance can be tasted will depend very much upon the quantity of the solution used. If one drop of a 50,000th solution was used, the absolute quantity of strychnine present would be the 50,000th part of a grain; while if 10 drops were used, it would contain the 5,000th part of a grain. When I reduced the mixture, obtained from the stomach and its contents, to four fluid ounces, I did not perceive a distinct bitter taste upon tasting a very small drop. The first

color developed by the color test with *pure* strychnine is a deep blue, which very quickly passes into purple, this into purplish-red, which soon becomes more or less red, and then fades. This is what is called the color test. To develop this series of colors, other agents may be substituted for the bichromate of potash. They are ferricyanide of potassium, peroxide of lead, binoxide of manganese, or a current of voltaic electricity. I prefer the bichromate; any of the other methods are about equally delicate. It is the change of color that gives value to this test. Doctor Hofmann and Professor Graham are good authority. I do not remember the special words in which Professor Hofmann describes the reaction of this test. Stilles' Materia Medica is received by the Medical profession as authority. Strychnine is usually stated to be soluble in 7,000 times its weight of pure water, but according to my own investigations, it requires but little less than 9,000 parts of pure water. A solution of this kind might be diluted with five times its volume of water, and a drop of the solution would still have a perceptible bitter taste; if diluted with ten parts of water, and ten drops were used for tasting, the taste would be more marked than before, because the absolute quantity of strychnine used would be about the 10,000th part of a grain, whereas, in the first instance, it would be about the 50,000th part of a grain.

I have in several instances extracted strychnine from the blood of animals poisoned by this substance. Some writers have stated that it could not be recovered from the blood, while others have stated that it could. It is my impression that Dr. Taylor states that it cannot be recovered from the blood. I never saw but one person die from the effects of strychnine. Doctor Hamilton gave me the jar containing the internal organs of a cat. I had heard that it was supposed that the cat had died from eating mush and milk poisoned with strychnine. I had also heard that it was suspected that Freet had died from the effects of strychnine. It would depend upon the method followed in the analysis of the stomach,

whether the presence of morphine would interfere with the color test or not. By the method I followed, morphine could not have been present in the residue examined by the color test. It is now quite generally known that morphine, if present in the residue to which the test is applied, interferes with the color test. I believe I was the first person to show this quantitatively.

Re-examined.—Certain animal substances may interfere and entirely prevent the action of the color test. I have detected the poison in the blood of eight different cats poisoned by strychnine. These analyses were made long before the occurrence of this case. From the fact that pure strychnine is much more soluble in chloroform than in ether, the former liquid is much preferable for the extraction of the poison. According to my investigations, strychnine dissolves in about eight times its weight of chloroform, whereas it requires about fourteen hundred times its weight of pure ether to dissolve it. The salts of strychnine are insoluble in chloroform. The poison is but sparingly soluble in pure water, but it dissolves very readily in water containing a free acid; most of the salts of strychnine are freely soluble in pure water. I consider the action of the color test, the precipitation by a solution of bichromate of potash, and also the precipitates produced by ferricyanide of potassium and a solution of caustic potash, with the subsequent treatment of these, as each within itself indicating conclusively and beyond a question of doubt, the presence of strychnine. I do not consider the reaction of the solution of carbazotic acid conclusive within itself, but it yielded a precipitate having the same crystalline form, as that produced from a solution of strychnine. The presence of calomel or opium in the contents of the stomach would not have interfered with the action of either of these tests, as they would have been removed from the mixture before any of the tests were applied. The sulphuric acid, in applying the color test, was applied before the introduction of the solid bichromate, for the purpose of ascertaining whether the acid alone produced any coloration. Cod-liver oil, narceine, and the other substances

which have been named, yield their colors to the sulphuric acid alone, whereas strychnine yields no coloration until after the addition of the bichromate. The ordinary medicinal dose of strychnine is about the 1-16th of a grain.

[TO BE CONTINUED.]

American and Foreign Intelligence.

Scarlatina.

[From La Clinique Medicale del'Hotel Dieu de Paris. Par A. TROSSEAU, Proffesseur de Clinique, Medicale de la Faculti, de Medicine de Paris. Translated by J. H. D.]

VARIETY OF EPEDEMICS—CONTAGION—INCUBATION—SYMPTOMS OF THE INVASION—CHARACTER OF THE ERUPTION—DESQUIMATION.

Gentlemen: For six months past you have frequently observed patients afflicted with scarlatina, in our wards, while in the city this disease has prevailed epidemically, assuming a severe type. Last month we were able to study rare forms of this disease, and I cannot let the occasion pass without speaking to you of them, for they are generally little known by the young gentlemen who visit our hospitals.

In fact, gentlemen, scarlatina is, of all the exanthematous and contagious pyrexias, the most variable in its forms and characteristics. It is, also, the most variable in relation to the danger the patient undergoes. Variola, whether benign, discrete, malignant or confluent, is still variola; it is always recognized by its peculiar characteristics; always, with very rare exceptions, observed particularly by physicians who have preceded us; it shows itself exteriorly by anatomical lesions which are peculiar to it, whether it has been modified or not, as it so often is, by vaccination or an antecedent variola. Scarlatina, on the contrary, may not appear upon the skin; it is, nevertheless, none the less serious. Rougeola has almost always the same symptoms; its diagnosis is ordinarily simple or almost always easy; its complications, generally foreseen, appear at a certain time, a certain day which the physician can foretell. Scarlatina, as we shall see, presents complications most frequently not anticipated, which the most experienced physician cannot predict, even when they are imminent.

Scarlatina is sometimes so benign, that one of the greatest observers of past ages, Sydenham, said of it: *Hoc morbi* NOMEN *(vix enim altius assurgit).* Sydenham has given us in his writings

only the results of his own personal experience; and as he had never seen it of a severe type, he treated scarlatina with a sort of disdain which he is far from having for rougeola or variola. In our own time, writers, whom we should consult, tell us that, for many years, scarlatina, as observed by them, was so mild, that they had not seen a death from it. Graves, in his *Clinical Lectures*, states that, in 1800, 1801, 1802, 1803 and 1804, scarlatina ravaged Ireland and was very destructive, while from 1804 to 1831, those physicians who had found it so terrible during the years already cited, saw hardly a patient die from this affection, which had become of wonderful benignity. In 1831, a new epidemic of malignant scarlatina manifested itself at Dublin and its vicinity, and in 1834 it plunged the whole of Ireland in a deeper mourning than did typhus a few years later, or Asiatic cholera two years before.

While I was studying medicine at Tours, M. Brettonneau taught us that scarlatina, which he had heard spoken of by his teachers as a very dangerous disease, had appeared to him quite otherwise. He told us that from 1799 to 1822, the year which we had then reached, he did not recollect having seen a patient die from scarlatina; and yet he had for a long time practised in the country before becoming physician-in-chief of the hospital of Tours. Numerous cases which he had seen, both in his country and city practice, had proved to him that this exanthematous pyrexia was the mildest of all. But in 1834 an epidemic broke out in Tours and its vicinity, and M. Brettonneau, who was opposed to the doctrines of Broussais then in vogue, learning that many patients had died suddenly, attributed it to the treatment employed by his confreres, who bled profusely to combat angina and the pretended initiatory inflammatory fever. Soon after, brought directly in contact with the disease, he found out that he could not always treat it successfully, a certain number of those under his charge dying; so that he who, before 1824, had regarded scarlatina as a mild disease, learned to dread it equally with the plague, typhus and cholera.

Thus, gentlemen, you see, scarlatina, which for a quarter of a century prevailed epidemically without presenting any severity, suddenly changed and became most serious in its character. It is less often so with rougeola and variola. Without doubt epidemics of rougeola and variola are sometimes very severe, but they are never so generally severe, nor are they ever so generally benign as are epidemics of scarlatina. For the latter, the epidemic genus dominates more than for the former; for, according to the nature of this genus, an epidemic of scarlatina is extraordinarily simple or remarkably severe.

You have witnessed, gentlemen, with what care I have questioned our patients upon the conditions which might have caused the disease. I do not forget that the causes which ordinarily favor the appearance of other diseases, are usually present in the evolu-

tion of the exanthematous pyrexias, and that contagion should be more especially sought for. I shall have occasion to recur hereafter to this evolution of contagion germs. I fear I should not give sufficient importance to this grand question, if I merely touched upon it now; and I should suffer the inconvenience, and that, too, by my own fault, of not being understood by you. You have seen how much importance I attach to the fact of knowing the day when, for the first time, a direct or indirect contact took place with a contaminated individual; you have noticed that if this contact was sometimes evident, at other times it could not be asserted, and that when communications had existed between the patient and one affected with scarlatina, these communications were such that it was impossible to state the duration of the period of incubation.

In an exanthematous fever, when the virus is not directly inoculated, nothing is more difficult to affirm than the duration of this period. There is nothing, also, which varies so much as the manner in which, generally, this question has been solved. According to some, the incubation of scarlatina continues from three to five days, according to others eight, and according to others again, it can be prolonged to fifteen, twenty, and even thirty days. In a word, hypothetical data are given, because it is impossible to give positive data until we can fix a precise date to the very commencement of the period of incubation. But this precise date, we can have for only one single pyrexia, variola, because variola is directly inoculable. Twice this inoculation has been practiced on a grand scale, for half a century, through the whole of Europe, we have been able to state exactly the period of time which intervenes between the moment when the virus of variola has been introduced beneath the skin and the time when the disease shows itself. But if, thanks to this, we have been able to determine exactly the duration of the period of incubation in variola, the same is not true of the other exanthematous pyrexias which we have not yet inoculated, perhaps because they are not inoculable. For the latter, it is necessary, then, in default of inoculation, to take as the point of departure for the period of incubation, the moment when the individual was in contact with another affected individual. But contact and inoculation are two very different things. For example: five hundred sheep are placed in the same park, or sheepfold, one of them takes the ———, an eruptive disease of sheep, analagous to variola in man. Fifteen to twenty days later, seven or eight other sheep are taken, and each day thereafter several more fall sick. Sometimes four months pass by before the last has been attacked. But all these animals, enclosed in the same place, breathing a confined air, crowded against each other, and receiving pus from their neighbors, are taken sick, at very different times. Do you conclude from this that the period of incubation has been longer among some than among others? Not at all, for if inoculation was performed the same day upon all, you would see the disease

manifesting itself the same day in all, without exception. Contact and inoculation are, then, two very essentially different things. By inoculation the virus is introduced almost necessarily into the system; by mediate or immediate contact, absorption, and if I may be permitted the expression, the conception of the virus does not always take place fatally, it takes place only when the economy is in a particular condition; it is necessary, so to say, that the way should be open. When once this absorption has taken place, either by inoculation or by contact, the evolution of the disease very probably occurs in a fixed period the same for all cases, within a few hours or a few days.

If then, in the case which I have just cited, we cannot state the period of incubation in animals affected by contagion, so in scarlatina we shall be able to indicate this period only, when we succeed in inoculating the virus of scarlatina. In a family composed of ten persons, the disease will sometimes require five weeks for developing itself in all its members; exactly the same will take place among them as among the sheep of the flock of which I just now spoke. This is owing to the fact, not that these persons were not in contact during a certain time, or that the period of incubation is longer in some than in others, but because they were in different conditions to be affected by the influence of contagion. The same thing takes place in such a case as in syphilis. The dyphtitic virus, inoculated methodically, determined after a certain number of days, the evolution of a specific vesicule, and this number of days is almost always positively the same. If, however, several men have intercourse with an infected woman, some will take the disease immediately, while others, exposed to an infectious contact several days in succession, will become infected only the last day, or will not be infected at all. This depends upon the fact that the former were from the first contact in physiological or pathological conditions, such that the virus immediately inoculated them, while the rest were only later in the same necessary conditions for the absorption of the morbid principle.

Finally, the period of incubation in scarlatina, that is to say, that included between the precise time of the inoculation of the virus of scarlatina and the precise period of the first manifestations of the disease—such period cannot be positively determined in the actual state of our knowledge. The same is true of rougeola.

There are, however, cases it is true very exceptional, in which the duration of the period of incubation of scarlatina can be determined in a measure quite positive.

At the beginning of the year 1859 I was witness of a curious fact in the practice of my friend, Dr. McCarthy, who did me the honor to call me in consultation. A London merchant had brought one of his daughters to the Eaux Bonnes, in the Pyrenus, and had passed the winter with her there at Pau. He returned to England, passing by Paris, where he expected to remain a few days. His eldest daughter had remained in London in charge of the house.

Anxious to meet her father and sister, she left London, and crossing the channel, was seized with a fever and sore throat, arriving at Paris seven or eight hours later, with a severe scarlatina. She reached the hotel about the same time that her father and sister arrived from Pau. The latter occupied the same chamber with her eldest sister, and twenty-four hours after experienced the first symptoms of a mild form of scarlatina. Scarlatina prevailed in London; there was none at Pau.

This very curious fact proves that the incubation in certain cases of scarlet fever, may only last twenty-four hours, but I am far from concluding from this that such is ordinarily the case. It is quite probable, in fact, that although the time of incubation of variola may be clearly determined, it is, by no means, in respect to other exanthematous pyrexias.

The *period of invasion* of scarlatina does not present any more clearly defined limits. Let us see what occurs in variola. In ordinary variola, when the eruption appears earlier than forty-eight hours, calculating from the commencement of the invasion, we may be sure that the eruption will be confluent, because, as a general rule, it is at the end of the second day or the commencement of the third, that the pustules show themselves in this form of the disease; for, if they make their appearance only towards the fourth day, we would diagnosticate a discrete variola. Rarely, indeed is the eruption of the confluent form delayed until the fourth day, and rarely, too, in the discrete form does it take place earlier than the second. It must be understood, however, that I speak only of regular variola, for the characteristics of modified variola or varioloid are not at all the same.

In scarlatina, the progress of the disease is different. In certain cases, the eruption appears during the first four or five hours of the fever; in some, indeed, as ancient authors have said, particularly Heister, and as has since been reiterated, there is, so to speak, no premonitory fever. Four times out of eighty-seven, according to the researches of Messrs. Barth and Rilliet, the eruption was the first manifestation of the disease. In the greatest number of cases the fever of invasion lasted twenty-four hours, and very rarely was it prolonged beyond the first day. It is rarer still, except in cases of complication, that the eruption takes place as late as during the course of the second day, and for a still stronger reason as late as during the third day. If some physicians believe that they have observed this at the latter period, I repeat the fact is extremely rare. I do not deny absolutely its possibility; in my opinion, however, the eruption in these cases must often, in the beginning, have been passed over unperceived, the attention of physicians not having been sufficiently awakened to this fact, they have not sought for it where it existed. In general it is upon the face that we first look for febrile exanthemata, for there in fact they first show themselves, at least in rougeola and variola. It is not so, however, in scarlatina. In the latter disease it is more espe-

cially upon the body, the fore arms, the bowels, and the folds of the thighs, that the eruption makes its first appearance, so that it may exist for, from twenty-four to thirty-six hours, before showing itself upon the face and neck. We may, therefore, believe that it has only just commenced, when in reality it made its appearance some time before. When one is, however, forewarned of its progress, this mistake can readily be avoided. There are, however, some cases in which the period of invasion is greatly prolonged, as in variola, of which we shall speak hereafter—the eruption appearing later than the fourth day on account of serious complications which may arise; and so, also, by reason of serious complications in scarlatina the exanthemata may show itself not merely in the course of the second or third day as we have just now stated, but its appearance may be delayed even to the eighth day, as the following case shows:

Six years ago I was called by my friend Dr. Sarrazin to see a child who was supposed to have a cerebral fever. The patient was six or seven years old. He had headache, had vomited, and there was strabismus, slow pulse, stupidity and somnolence. From these symptoms, we supposed there was meningo-encephalitis. The disease continued, and I revisited the patient the fifth, sixth and seventh day, in no respect altering my diagnosis, and prognosticating a fatal termination. The eighth day a well marked eruption of scarlatina appeared, accompanied with the usual sore-throat, and at the same time the nervous symptoms entirely disappeared. I have seen, in truth, only this single case in the course of my whole medical career, but I do not know whether other physicians may not have seen analagous cases. They are exceedingly rare, for as a rule, the period of invasion in scarlatina is very short.

The phenomena which characterize it are usually fever, either with or without a previons chill. The chill was not present in the pa ients you have lately seen in our wards. The pulse is quite frequent more so than it is in the other exanthematous fevers. This is important, for in studying this disease in detail, when speaking of scarlatina without eruption, you will observe that in a good many cases, we make a diagnosis solely from the extreme frequency of the pulse, which is seldom observed in other affections which might be confounded with scarlatina. Vomiting and diarrhœa are often present, and almost always the sore-throat appears at the same time with the fever. It is to this symptom that the patient at first calls the attention of the physician, and for that reason it has a particular diagnostic importance. The first day the tongue has no particular appearance; it is febrile, that is, covered with a slightly yellowish fur, slightly red at its point and edges, but upon the veil of the palate a bright redness is always observable, which in some cases is spotted. This redness on the contrary is very well marked upon the tonsils which are slightly swollen.

When the disease is malignant, then the symptoms are very different. The frequency of the pulse is much greater, reaching in

the adult, 130, 140, 150 and 160 pulsations the first day, even before the eruption has appeared upon the skin; at the same time, the nervous system becomes disturbed, there is restlessness, convulsions, an unyielding wakefulness, delirium, and almost always a muttering delirium when the patient is left to himself. These symptoms are very unfrequent in simple sore-throat, as well as in the other fevers. From the very first, malignant scarlatina, appears in all its malignancy, which may be so great as to destroy life within twenty-four hours.

I was called by my friend Dr. Bigelow, to a school at Paris, to see a young American girl. She had been, since morning, in a raving delirium. There was an incessant vomiting, an intense fever, and the pulse was so frequent that it could not be counted; the skin was remarkably dry. These symptoms caused me to conclude, on approaching the patient, that she had scarlatina; and if nothing else demonstrated its existence, my diagnosis was confirmed by the presence of a characteristic eruption upon another girl in the same school, in which then prevailed an epidemic. Our patient died before the close of the day.

In 1824, at the commencement of that disastrous epidemic which spread over Tours, of which I have already spoken, I saw, with M. Brettonneau, a young woman die within eleven hours, with terrible symptoms, delirium, excessive restlessness, extraordinary frequency of pulse, and there was nothing to indicate the character of the disease, except that we were in the midst of an epidemic of scarlet fever, and that several persons in the same family had been attacked.

Be on your guard then, if under similar circumstances, in the midst of an epidemic of scarlet fever, and especially if several persons in the family of your patient have been ill with it; be on your guard, if these nervous symptoms appear at the beginning of an illness. They almost always announce a malignant scarlet fever, and it almost always kills with dreadful rapidity.

I am very emphatic upon this point, because the most serious errors of diagnosis may be made on account of it, and a faulty prognosis be given which may seriously compromise the reputation of the physician. In practice, we are sooner forgiven for letting patients die than for making mistakes in regard to the termination of a disease.

These precepts upon the value of prognosis in general, as regards the patient and as regards the physician are of great importance. Hippocrates announced it when he said, in the first chapter on Prognosis:*

"It appears to me a most excellent thing for the physician to cultivate prognosis; for by foreseeing and foretelling, in the presence of the sick, the present, the past and the future, and explaining the omissions which patients have been guilty of, he will be

*Genuine Works of Hippocrates, translated by Francis Adams, LL.D., Sydenham Soc. Ed., Vol. 1, page 234.

the more readily believed to be acquainted with the circumstances of the sick; so that men will have confidence to intrust themselves to such a physician. And he will manage the case best who has foreseen what is to happen from the present state of matters. For it is impossible to make all the sick well; this, indeed, would have been better than to be able to foretell what is going to happen. It therefore becomes necessary to know the nature of such affections, how far they are above the powers of the constitution, and, moreover, if there be anything divine in the diseases, and to learn a foreknowledge of this also. Thus a man will be more esteemed to be a good physician, for he will be the better able to treat those aright who can be saved from having long anticipated everything; and by seeing and announcing beforehand those who will live and those who will die, he will thus escape censure."

There are considerations which it is well should not be forgotten in practice. To return to our subject. When you observe the symptoms, of which I have spoken, in an epidemic of scarlet fever, be cautious in the expression of your opinion, for they may, perhaps, suddenly terminate in death. They are almost never so fatal in rougeola or even variola.

I have endeavored to point out to you at the bedside, the characteristics of the eruption. Still, I fear notwithstanding the care I have taken, that I have not succeeded.

If we consult certain works, it would really seem that a physician should never fail in making a diagnosis in this disease. Rougeola, they say, consists in an eruption of small isolated points, irregular in form, with intervals of white skin between them. Variola is known by its little accuminated papillae, becoming vesicular the second day, pustular the third, and about the eighth day becoming umbilicated and surrounded by an inflammatory areola. These peculiarities are so well marked that we should never be mistaken. As to scaraltina, its characteristics are still more distinct. The eruption is diffuse, in spots, of a bright red color. This is very simple, but these discriptions are far from giving an exact account of what really exists in all cases. I have shown you, in fact, measles when the eruption was diffuse, uniform, without the spots being isolated, by islands of white skin. This form, it is true, is not the regular rule, but it exists. On the other hand you will meet discrete scarletinas, and even very confluent cases, in which the eruption will be in certain places, formed by spots, and even by a multitude of little round red points, perfectly isolated from each other, and without that wine-like color, or raspberry color, which is given to it. Although it differs from the eruption of measles, they can, nevertheless, be confounded with each other.

What distinguishes scarlatina, is the presence of the miliary eruption which very often accompanies the redness of the skin; it is almost invariably present when the eruption of scarlatina is slightly confluent. It appears upon the sides of the neck, of the

chest, upon the bowels, and can be discovered without the eye, by passing the hand over the regions, when little elevations will be felt like that condition of the skin called goose-skin. Examining them, a multitude of little vesicules will be seen, which, within thirty-six or forty-eight hours, become filled with a lactescent fluid.

The eruption of scarlatina is not usually of a uniform color like that of erysipelas, but is composed of an infinite series of little red elevations of the skin, resembling very fine vesicules of eczenea. They are readily felt, and are still more evident by the aid of a magnifying glass. These little elevations have a rose red base. The redness of the skin is in its greatest intensity upon the neck, chest, bowels, inner side of the arms and thighs. If we press with the finger upon those parts occupied by the eruption, or draw a line over the surface of the skin with a pencil, for example, the redness will momentarily give place to a white color, which is in contrast with the redness which surrounds it; with the cessation of pressure, the redness rapidly reappears. This point had by no means escaped the observation of our predecessors; it is found laid down by Borsieri. The eruption appears in all parts about the same time, although it becoms doveloped most frequently upon the neck before it appears upon the face. In this latter place it has a different appearance than upon the body. Bright red in some places, and with white lines; besides these, the skin of the face looks as though it had been violently struck with the open hand, leaving the marks of the fingers; at the same time it is swollen, and this tumefaction is also observed upon the hands and feet. Appearing at the same time with the eruption, the swelling increases with it, and, consequently is greater the second and third days. It so interferes with the movements of the fingers that the patient can bend them with difficulty, and is easily recognised by the eye. Following the eruption it generally disappers with it, both upon the face and extremities. This swelling, gentlemen, should be very carefully distinguished from that which belongs to scarlatinous rheumatism, of which we shall soon speak.

On examining the throat of the patient, you will find it a very bright red color, with tumefaction of the veil of the palate and of the tonsils; very often the latter are covered with small whitish concretions, the first manifestation of membranous angina of scarlatina, of which I shall speak more at length.

The appearance of the *tongue* is of such a character, so specific, that it alone is sufficient to indicate the disease. You will find nothing like it either in rougeola or variola; it is as much confined to scarlatina as is, perhaps, pustules of the mouth to variola. The first day there is only a more or less thick yellowish fur, more or less white, with a yellow or green tinge when the patient has vomitted; at this time there is only a little redness of the point and edges of the tongue, of which we have already spoken. The next day this redness increases in intensity and extent; it increases also the third day, and the fourth the saluvial covering has almost

entirely disappeared. The whole tongue then is of a scarlet red, tumefied; the papillæ are considerably elevated, giving to its surface the appearance of a strawberry. It is deprived of its epithelium, and, in some cases, the process of desquamation can be helped along by rubbing with a piece of linen upon the affected part. This is a constant phenomenon, invariable in scarlatina, unless there has been no febrile symptoms. Nothing like this, I repeat, is present in rougeola or variola, even when the latter is accompanied with stomatitis. Towards the seventh or eigth day, still preserving its red color, the tongue becomes smoother; and towards the eighth or ninth day the epithelium is reformed, at first very thin, and towards the twelfth day it has regained its natural thickess, but the mucous membrane continues redder than it is in its normal state.

In studying the relations which exist between the severity of the disease and the intensity of the eruption, you will find that certain authors have committed a grievous mistake in this respect, which might lead those practitioners who are not familiar with scarlet fever, into error. These authors say that when the eruption is well developed, very bright, well out, to use the vulgar expression, the patient is less likely to have any serious symptoms. The contrary is true. What has been said of variola may be said of scarlatina, the severity in both is in direct ratio to the intensity of the eruption. In a discrete scarlatina, the danger is ordinarily less than in a confluent scarlatina; as in a discrete variola there is less to fear than in a confluent variola. In both of these exanthematous pyrexias, the more intense the eruption, the more serious the symptoms and the greater the danger.

This proposition is, however, gentlemen, not absolute. If the eruption of variola or scarlatina is impeded by any severe antagonistic flux, by great hemorrhages, by intense nervous perturbations, it does not take place, or appear very incompletely.

Scarlatina, I have said, in commencing does not even resemble itself. Identical, be it understood, in its essence, it is not so in its forms. In some cases, after ten or twelve hours of fever, an insignificant eruption appears upon the neck, upon the body; and two or three days after this eruption, the slight febrile movement which had accompanied it, had disappeared. The patient has hardly felt sick. Desquamation follows, by small strips or by pieces, sometimes hardly any is observed; then five or six days more and the patient is quite well, if he is not exposed to cold, or if he commits no imprudence, that is the last of it. The disease has been so simple, that it might have passed over unperceived.

Between this benign form and the severe form which I have generally had in view, the prominent symptoms of which I have sketched, we find intermediate forms, and, finally, we have malignant scarlatina, which I told you was a terrible scourge, equal to the most severe of the pestilential diseases.

Desquamation in scarlatina is a phenomenon not well under-

stood by the majority of physicians. I have shown you, this morning, two women, in one, desquamation at the seventieth day has not yet terminated; in the other, at the thirty-fifth day it is in full vigor.

Ordinarily, the red color of the skin disappears more or less rapidly. In some cases, however, the eruption is still very apparent, while desquamation is occuring in several points. It begins upon the neck and chest from the sixth to the ninth day, then it takes place upon the limbs, the back of the hands, then upon the palms of the hands, and, finally, upon the soles of the feet. It presents peculiarities upon the body, but is more apparent upon the hands and feet than elsewhere. Upon the body it occurs in quite large scales, not often more than two to three millimetres square, at other times one centimetre, one and a half centimetre and two centimetres. Upon the arms and legs, where the epidermis is a little thicker, the pieces can be four to five centimetres broad, and they can be taken off in bands as after erysipelas and phlegmons. The desquamation of scarlatina has never the furfuraceous form of the desquamation of measles. In rougeola these furfura are so small that we are obliged to look closely at it in order to see it, and often we are obliged to rub the skin of the patient with his clothes, in order to collect the white dry epidermis dust which they form. In scarlatina the desquamation presents such a significant appearance upon the hands and feet that it is impossible to mistake it. The epidermis upon the former comes off in irregular strips, of a variable length, sometimes very long, resembling pieces of a glove. Upon the feet it takes place slower, the detached strips are thicker than those from the hand, and sometimes the nails, which are, as you know, an epidermic production, fall. This is rare, but it has been observed, and Graves reports an instance.

2. NERVOUS SYMPTOMS—ANGINA, COMPLICATED WITH DIPHTHERIA—BUBOES—RHEUMATISM.

The phenomena which have particularly attracted your attention in scarlatina—those which have appeared the most alarming—are the nervous symptoms. There is something, it must be confessed, so peculiar about their intensity in this disease, that they alone are sufficient in the majority of cases to distinguish this pyrexia from any other exanthematous fever. Rougeola is never, or almost never, preceded by serious cerebral symptoms, except eclamptic convulsions, which sometimes occur, and as in fact there can be no reason for confusion between rougeola and scarlatina after the eruption has appeared, the severity of the nervous symptoms serve as a capital differential diagnosis between them.

They are present from the very beginning, appearing in the form of delirium from the very first day. I speak of what takes place in the severe type of scarlet fever; for, in the benign form this symptom is observed only in exceptional cases, where there is ordinarily great nervous sensitiveness. But in grave scarlatina

delirium is seldom absent, and when the case is serious it is as well marked as in the most severe case of typhoid fever; it appears with the eruption, persists often until the period of desquamation, or more correctly until the fever is abated.

This is by no means the only manifestation of trouble in the nervous system. It is observed also by *carphologia*, *gactitation*, *coma*, and in some cases by *coma vigil;* in a word, all the forms of typhoid nervous symptoms are met with. In children, *eclampsia* also occurs during the first two or three days, less often, however, than at the commencement of rougeola and variola. These convulsions have a very different significance than the initial convulsions of rougeola and variola; for while those occurring in variola are considered by certain authors—by Sydenham among others—(whose opinion in this respect I do not partake) as of a favorable character; while the initial eclampsia of rougeola is generally regarded as a symptom of little consequence, the convulsions which occur during the first or second day of a scarlatina are, upon the contrary, very serious. They are still more serious when they occur in the third period of the disease, when there is general œdema. We shall have occasion to speak hereafter of their signification, and to state that such cases are almost always fatal.

In adults even the epileptiform phenomena have occurred. They appear the second or third day of the disease, particularly in those who are subject to real attacks of epilepsy and who have previously had them. These initial convulsions recurring, coma follows, and death may supervene within twenty-four hours after their first appearance.

There is also another nervous phenomenon of bad omen. I mean that form of dyspnœa, which, not attached to any appreciable material lesion of the lung, is found, with its sad signification, in a great number of leptic diseases, as puerperal typhus, camp typhus, cholera, etc.; a deplorable example of which you have seen in our wards, in the person of a young woman, recently delivered, who died suddenly from scarlet fever, the history of which case I shall recall to you when we enter upon the subject of treatment.

Independently of the disorders following affections of the cerebro-spinal nervous system, there are others which depend upon perturbations of the ganglionary nervous system; perhaps the very severe dyspnœa just mentioned is itself one of these morbid phenomena.

You are all acquainted with the remarkable experiments of M. Claude Bernard upon the grand sympathetic nerve; you know that a section of this nerve produces in those parts to which its filaments are distributed, not a paralysis, but on the contrary, an exaggeration of certain functions, of calorification and secretion. The learned Professor of the College of France has shown how, by cutting the filaments of the trisplanchric, which go to the ear and the face of the rabbit, the temperature of these parts is elevated four to five degrees centigrade above the normal temperature, and above that of the opposite side, the nerve going to which has not been operated

upon. He has shown how, by destroying the thoracic ganglions, and those of the solarplexus, effects of vascularization analogous to those observed in the experiments I have just cited are produced, which are followed by violent inflammations. He has also shown that lesions of the ganglionary system have a great influence upon the secretions. Applying to pathology the results of these physiological experiments, we conclude that whenever calorification is increased in an animal there is reason to suppose that a disturbance has taken place in the trisplanchric nervous system rather than in the functions of the cerebro-spinal nervous system. There is assuredly no disease which is accompanied by an elevation of the temperature so great as scarlatina. If the thermometer be placed in the armpit or the rectum of such patients it will indicate 40 to 41 degrees centigrade; J. Currie has noticed 112° Fahrenheit, which corresponds to 44½ degrees of our thermometer. This elevation of temperature can only be explained by difficulty in the ganglionary innervation, which is also manifested by disturbances in other functions which are under the control of the grand sympathetic nerve, such as *incessant bilious vomitings* at the commencement of the disease, unfavorable symptoms, which persist in some persons four, five, and six days, as well as abundant uncontrollable diarrheas, which we have often observed.

It is well to note the non-inflammatory nature of these morbid symptoms. If possessed with the idea of inflammation which the burning pungent heat of the skin would seem to indicate, you attempt to overcome the diarrhea and the vomiting by antiphlogistics, you would adopt the most dangerous treatment possible, for of all eruptive fevers scarlatina requires such kind of treatment the less, which is in fact rarely beneficial in variola or rougeola.

Besides these symptoms, we have also to indicate the hemorrhages which occur from all the mucous membranes into the subcutaneous cellular tissue. When scarlatina assumes early the hemorrhagic form, it is invariably fatal; whilst hematuria, which is so often observed in the course of this disease, and which is so often accompanied with anasarca, is a much less unfavorable symptom. You have already seen, gentlemen, several patients cured after having passed bloody urine for more than fifteen days. We shall recur to this symptom again.

I now reach the subject of scarlatinous angina. This angina is one of the most difficult affections to describe or to recognize. To point out its simple or serious forms is easy, but it is not so in regard to one of the latter forms, which we shall study in its turn, in which diphtheria complicates the difficulty, disconcerting the precautions of the physician, and gives to the angina a character of fearful seriousness.

Scarlatina is essentially anginous, if I may be permitted the expression. However benign it may be, it is very seldom that it is unaccompanied by sore throat, as it is seldom that rougeola, however mild it may be, is unaccompanied with pain of the larynx.

This pain in the throat is also met with in variola, for the presence of three or four pustules upon the pharynx is sufficient to occasion it, but variolous angina differs incontestibly from scarlatinous angina.

In scarlatina, from the very first day of the disease, the veil of the palate is red, of a tint analagous to that of the skin, a little deeper, however; the tonsils, slightly swollen, are of a violet color. The fever continues, and after two, three, or four days, small whitish concretions appear, often upon one tonsil, sometimes upon both, ordinarily of a milky white, unless the patient having vomited, they are colored by some substance ejected from the stomach. Closely examining them, after removing them by the handle of a spoon, you will observe that these concretions differ from false diphtheritic membranes; the latter, of a yellowish white, are adherent, and when you take hold of them with a pair of forceps they come off in shreds. The scarlatinous concretions are pultaceous, less adherent to the tonsils, have not the character of false membrane, and resemble much more those secretions which are found, for example, on the surface of bad ulcers.

The affection progressing, the intensity of the angina may become so great as to impede respiration, and particularly deglutition. The patient, in attempting to drink, returns the fluids through the nose; his voice is nasal, the ganglions of the neck, particularly those of the angles of the jaw, become engorged. Uninterfered with by any medical treatment, or by very slight treatment, angina disappears at the same time with the eruption upon the skin. The tonsils are freed from their concretions, remaining red, and sometimes excoriated;—the disease is cured. The throat and the tongue still remain sensitive, and this excess of sensitiveness lasts longer upon the former than the latter. The whole ends by a kind of desquamation analagous to that we have already observed upon the tongue.

Such is the ordinary, the simplest form of scarlatinous angina. There are other severer forms, and one in particular, to which I have already alluded, which is almost invariably fatal. I ask your especial attention to it.

Some persons are seized with scarlet fever of moderate severity; they have a little delirium at night, hardly any nervous symptoms, the pulse is quite frequent, the pain in the throat is, however, slight. The disease reaches the eighth or ninth day, recovery seems certain, the fever abates, the eruption disappears, and you congratulate the family. Suddenly considerable swelling appears at the angle of the jaws, extending down upon the neck, and sometimes on to the face. A sanious fetid, very abundant discharge, runs from the nose; the tonsils are very much swollen; the breath has an insupportable odor; the pulse suddenly becomes again very frequent, is small; delirium returns, and, at the same time, the skin becomes cold, the pulse weaker and weaker, and the patient dies after three or four days, in a prolonged agony, or suddenly, in a syncope.

How can this be explained? You might ask if diphtheria has not complicated the scarlet fever and interrupted its course. These symptoms, it is true, resemble so much the serious forms of this terrible disease, those forms, which destroy adults or children before the membraneous affection has had time to extend to the larynx, the false membranes being confined to the nasal fossæ, to the ears, to the throat; these symptoms so closely resemble those which characterize those destructive forms of malignant diphtheria, that we are inclined to believe that it is not scarlatina, but this latter affection, which has taken away our patient. I am the more disposed to adopt this view of the case, because in some cases, the larynx is invaded. Graves gives some instances of persons dying from croup at the termination of a scarlatina, and others being cured of this exanthematous fever after having thrown off false tubular membranes of the shape of the trachea. Graves, citing these facts, accuses me of having misunderstood this form of scarlatinous angina; in fact, I formerly did so. I have said *scarlatina does not like the larynx.* But, during my service at the Childrens' Hospital, I observed in a great number of cases such an extraordinary identity between malignant scarlatinous angina and malignant diphtheritic angina that I have been confused in my opinion. Now I cannot help believing, although I dare not insert it, that these symptoms, of which I have just spoken, are nothing else than diphtheric symptoms, occurring at the terminatian of scarlet fever, as a formidable complication. Patients die, in fact, with all the symptoms of diphtheritic poisoning; general coldness, small pulse, fetidity of the breath—both by the mouth and nose—universal pallor of the skin; all symptoms which are not observed in any other serious disease. It may be that these patients being situated under particular conditions, in the midst of an epidemic, (which often happens in childrens' hospitals, where diphtheria, so to say, always prevails), it may be that the scarlatinous angina becomes the point of attraction for diphtheria, the same as a little excoriation behind the ear, as an ulceration of the vulva, or of folds of the skin, or any other wound, may, in persons situated under similar epidemic conditions, become the point of departure for diphtheria. What tends more to sustain me in this view of the case, is that of these anginas suddenly arising at the ninth or tenth day of a scarlet fever. I recall but one patient who recovered, it was the daughter of my honorable friend Dr. Caffe; while for true scarlatinous angina, even severe, commencing with exanthematous fever, and reaching its highest point about the fifth, sixth, seventh and eighth day of the disease, recovery is the rule, and often without the aid of art.

When we take up the subject of the treatment of scarlatina, I will speak of the treatment of the sore throat which accompanies it. I will now simply say that the membranous angina of scarlatina (not that malignat form to which I have just called your attention, but the simple form, which I have said is almost always accompanied with pultaceous membraneous concretions), this sim-

ple scarlatinous angina acts very differently from diphtheritic angina. While the latter is mobile and tends to the nose and larynx, the former, on the contrary, is most generally limited to the pharynx, and for it I hold to the proposition condemned by Graves; *it does not love the larynx.* True scarlatinous angina is, then, pharyngeal very different from the angina of measles, which is laryngeal; or the angina of variola, which is at the same time both pharyngeal and laryngeal. The voice of those affected with it is nasal, but its timbre is sonorous; changed only in its passage through the throat, the nose and the mouth. In rougeola, the *timbre* of the voice, very often altered when first found in the larynx, is not again changed in its passage through the pharynx.

In describing the eruption, we noticed the tumefaction which accompanied it; we said that it interfered with the movements of the fingers and toes, but this tumefaction is not the only cause of this difficulty complained of by patients; it not only follows the congestion of the integuments, but is the symptom of another complication which is also met in the acute period of scarlatina, namely, rheumatism.

The *rheumatism of scarlatina* is of very common occurrence in adults, and two of our patients are at this moment affected with it. As it is not alluded to by the general symptoms of ordinary rheumatism, as it is in the greater number of cases limited to three or four articulations, principally those of the hand and the wrist, it often escapes observation. Patients seldom camplain of it, and the attention must be awakened upon this point in order to discover the existence of this affection. Then upon carefully questioning the patients, upon attentively examining their articulations, upon submitting them to a certain degree of pressure, we find, in a third of the cases, perhaps, these articular pains. It is important to know this, for, in the progress of the disease, we often see acute symptoms in the region of the joints arise, general anthritis, frequently also pericarditis, endocarditis, complications mentioned by Graves, which I have myself seen, and which appear to me to be of a rheumatic nature. The rheumatism of scarlatina is also sometimes followed by chorea, which is observed in children. We shall return to this subject.

In certain cases towards the end of the disease, towards the end of the eruption, *ganglionary engorgements* appear in certain regions, principally in the neck, true *buboes* of scarlatina.

All pestilential diseases are accompanied by buboes. For instance, dothinenteretis has its mesenteric buboes; for you know, towards the ninth or tenth day of that disease, the ganglions of the mesentery may become of an enormous size, equal to a pigeon's egg. Scarlatina, which is a pestilential disease, has its buboes. Their principal seat is in the cervical region, and their evolution is determined by the lesions of the throat. From the very beginning of the disease, you will perceive ganglionary engorgements upon the sides of the neck, and at the angles of the jaw. Some-

times towards the tenth or twelfth day, independently of the disorders produced by that severe form of which I have spoken, the cervical ganglions suddenly become inflamed, the skin redens, is distended, and, in four, five or six days, a phlegm is formed. If it is opened, pus flows out, and in some cases, the cellular tissue which surrounds the ganglion, is speculated. I recollect a young lad, fourteen years old, in whom this gangrene was so extensive that the muscles of the neck were dissected, as in diffuse phlegmons, so that the carotids were seen to beat at the bottom of the horrible wound, which was produced. The patient recovered, but with a terrible deformity. Graves reports a similar case.

Analagous lesions may be produced in other regions of the body, even where there are no ganglions, at least where they do not seem to have been the point of departure for these symptoms. In the young lad just mentioned, besides the large abscess of the neck, about the tenth day of the disease a diffuse abscess of the leg appeared, which produced retraction, a considerable shortening of the tendon, leaving the patient lame, so much so, that this inferiority exempted him from military service when, six or seven years after, he was conscripted.

Scarlatina can not only give rise to these ganglionary disgorgements, these acute buboes to these diffuse phlegmons of the cellular tissues, during the active period of the disease, but it also can occasion *chronic glanglionary engorgements.* In infants, who are not at all scrofulous, you will observe, following this exanthematous fever, chronic ganglionary engorgements, which begin with it, and which persist for two, three and four months after its cure. In individuals afflicted with a stremous diathesis, these disgorgements become scrofulous, and the ganglionary inflammations often terminate in scrofulous ulcerations.

[TO BE CONTINUED.]

On the Injurous Effects of Chloroform During Labor. By ROBERT JOHNS, M.B., F.R.C.S.I., Chairman of the Midwifery Court, and Examiner in the diseases of women and Children, Royal College of Surgeons, Ireland, &c.

As, at the present, the subject of chloroform inhalation is again *sub judice*, I feel it incumbent upon me to raise my voice against its employment in midwifery, and to lay before my professional brethren my reasons for the adoption of such a course, which I sincerely trust shall have some weight with the unprejudiced, and which may, perchance, call the more serious attention of some, if not of all, of those now too deeply wedded to its use, to the dangerous, and too often fatal results consequent thereon; in which, if I but even partially succeed, I shall consider myself well repaid.

From experience, repeated observation, and the published, also

the otherwise expressed opinions of those who agree, as well as of those who disagree with me upon the subject, I am firmly convinced that chloroform, when inhaled during labor, very fruitfully predisposes to hæmorrhage, puerperal inflammation, chest affections, and to other diseases detrimental to health and life, which it aggravates if given during their presence. It also lays the foundation of disease to arise at a more distant period, and thus increases the mortality in childbed, and subsequent thereto. I have known puerperal inflammation frequently to have followed its inhalation, and too often with a fatal result; in fact, some years since, when it was more fashionable, and was given with a more lavish hand, a great mortality obtained amongst the patients of some few men who administered it—so much so that a popular outcry was raised against its employment. In the majority of these cases, puerpeal fever was the cause of death, which, when thus raised, being, as I firmly believe, always infectious or otherwise communicable, became epidemicized, after which even those who wisely refused the drug, "charmed it never so sweetly," were thus inadvertently, and, in some instances, hopelessly poisoned.

In support of these positions, I shall first refer to the several published Reports of the Dublin Lying-in Hospital. We find, on reference thereto, during the masterships of Drs. Collins and Johnson, when chloroform was not inhaled, that the mortality was much less than during that of Dr. Shekleton, when this pernicious drug was used—as thus:—In the first report are recorded out of 16,414 deliveries but 164 deaths, or 1 in 100; in the second, out of 6,634 deliveries but 65 deaths, or 1 in 102; whereas in the third, 13,748 deliveries are given, and 163 deaths, or 1 in 84!! But of these last cases 13,406 of them were not chloroformed, of which only 133 died, or 1 in 100, but of the remaining 342, who took the drug, 30 died, or 1 in 11!!! If, again, we examine the reported cases of chloroform administration by Simpson and Denham, we shall find that of 245 cases mentioned by the former, 5 died, or 1 in 49; and of 56 by the latter, 5 died, or 1 in 11!! And, by adding all these recorded cases together, we have a mortality on the whole of 1 in 16!!! By again consulting those reports, we perceive that in Dr. Collins' mastership there occurred 79 cases of post partum inflammation, or 1 in 169; in Dr. Johnson's, 62 cases, or 1 in 107; but in Dr. Shekleton's, 150 cases, or 1 in 91. Of those 150 cases, 20 followed upon chloroform inhalation, or 1 in 17!!! and in the remaining 130 cases, in which it was not employed, the average mortality was only 1 in 103. In Denham's report we find 4 cases, or 1 in 14; which, with all the recorded cases, strikes an average of 1 death for every 16½ persons who took chloroform!!!

We also find that during Dr. Collins' mastership, puerperal convulsions proved fatal in the proportion of 1 in 6; whereas in that of Dr. Shekleton, when under chloroform, it amounted to 1 in 3!! and in Denham's cases to 2 in 3!!! or, on the whole, to 1 in 2⅝!!!

It appears that, during Dr. Shekelton's tenure of office, post partum hæmorrhage occurred but once in every 257 cases when

chloroform was not used; yet after its inhalation this complication was present in 1 of every 49 cases. In Dr. Denham's report it was present in 1 of 19 cases; making, on the whole, an average occurrence of one case of flooding in every 39 4-5 cases that had taken chloroform.

With respect to the mortality after perforation, the report of Drs. Hardy and McClintock shows 1 fatal case in every 6, and that of Drs. Sinclair and Johnston 1 in every 5; but if we go a little below the surface in the latter report, and examine into 99 cases of perforation, all of equal severity and danger, we shall discover that of the 29 cases in which chloroform was inhaled 9 died, or 1 in 3¼; puerperal inflammation occurred 10 times, or 1 in every 3 cases; and hæmorrhage followed in 3 cases, or 1 in every 10; whereas, of the 70 cases in which this drug was not employed, only 6 women died, or 1 in every 12; puerperal inflammation arose only in 3 cases, or 1 in every 23; and in no case did hæmmorrhage occur.

Many have testified to the fact that uterine action has been lessened, and even caused to cease, by anæsthetics; as also that their effect on some is not commensurate with the quantity of the drug employed—thus: a very large amount not having any effect upon some, whereas the inhalation of a very small dose, even of a few drops, has produced almost deep coma in others. Dr. Denham says:—"In some, if left to nature, the labor would probably have been completed in a somewhat shorter space of time. The advantage to be gained by chloroform in some cases will not be found an adequate compensation for the loss of power sustained in the muscles of animal and organic life; and, were we to continue its use, I do believe that patients would remain undelivered for hours, or even days. The cases that apparently require it most—tedious and difficult labors—are those where it often appears to be injurious, by weakening the pains or relaxing the muscles of animal life." Rigby says:—"We meet with cases, every now and then, where chloroform undoubtedly retards labor, and in some cases likely to call for the use of the forceps."

Dr. Robert Lee mentions cases in which "uterine contractions were arrested, requiring the use of the forceps, and the destruction of the child by the perforator."

Tyler Smith "has seen chloroform stop labor midway."

In some of the cases recorded by Sinclair and Johnston, uterine action was impaired.

My friend Dr. Young, of Monaghan, says, in a letter to me:—"I believe chloroform in many instances to delay the labor, by causing the pains to come at longer intervals, and rendering the expulsive efforts of the patient less efficient, owing to her insensibility to suffering."

Merriman has mentioned a case in which the uterus was so paralyzed that it failed to act afterwards.

Snow says:—"It is true that a full dose would, at any time,

suspend uterine action for a few minutes, or as long as it might be kept up."

On looking into Drs. Sinclair and Johnson's report, we find "two cases in which version was very difficult: and two others in which that operation was impossible, where chloroform had been inhaled."

Murphy thus speaks:—"In a case of version, I never experienced so much difficulty, in consequence of the strong contractions of the uterine fibres about the child."

Barnes remarks:—"In many cases it does not facilitate the operation of version, the uterus resisting the introduction of the hand."

Puerperal, hysterical, and epileptic convulsions, mania, paralysis, and insanity have followed on its use. Cases are recorded by Montgomery, Sinclair, and Denham, in which puerperal convulsions occurred after its employment. Sinclair gives two cases of hysterical convulsions, in one of which violent muscular action was induced and restlessness continued for a considerable time after the inhaler was removed.

Murphy states that, "in dentistry, hysterical women have been seized with fits when under its influence."

Snow asserts that "hysterical patients, as soon as they lose their consciousness from the effects of the vapor, are sometimes attacked with a paroxysm of hysteria."

Dr. R. Lee says:—"Epilepsy has been so induced."

Sinclair records one case of epilepsy.

Snow and M. Fix have stated "that persons subject to epilepsy are likely to have a fit brought on by inhaling chloroform."

Ramsbotham "saw three cases of puerperal mania so caused. A friend of his also saw one similar case."

Sutherland "met three other cases similarly produced."

Tyler Smith stated "that he had seen mania from its use."

Parks relates the case of a lady who had chloroform in her third labor. "She, after delivery, complained of violent pain in the head, became delirious, tore the nurse's gown and the bedclothes into pieces, and was perfectly maniacal."

Mr. Banner thus speaks:—"A patient became delirious, and continued so during the day and a greater part of the night, after its use."

Haartman "saw a case of headache terminating in paralysis, caused by this drug."

In one of Dubois' published cases, numbness of the fingers, and in another the same condition of the legs, supervened, and had not subsided at the end of twenty-four hours.

In Denham's report I find one case of coma after chloroformic inhalation.

Dr. R. Lee says "that insanity has followed on its employment; that dangerous and fatal peritonitis and phlebitis have been caused by its inhalation."

Two or three of Denham's cases were seized with rigors; and

Lee mentions others with dangerous fits of syncope; and in this he is borne out by the following, which I find recorded amongst Denham's cases:—"While inhaling, the pulse became very weak, and she gave no signs of consciousness; and immediately on the birth of the child the respiration of the patient ceased, and the pulse became imperceptible; the application of cold water to the face soon revived her, and she went on favorably for some days; but diarrhœa, with extensive inflammation of the mucous membrane of the ileum set in, and she died on the fourteenth day."

Sinclair and Johnson record nearly a similar case, as thus:—"The pulse suddenly became imperceptible, and respiration appeared to have ceased. She subsequently died of phlebitis." And they give another in which collapse occurred, and she also died with symptoms of phlebitis.

Dr. Barnes stated—"That he had himself given chloroform to facilitate the extraction of an adherent placenta, and had witnessed such exceeding prostration for eight hours afterward, as to make him, and another practitioner who assisted him, apprehensive of the instant death of the patient."

Many are of the opinion that the inhalation of chloroform predisposes to laceration of the perineum; indeed, some of the published cases would tend to favor this idea. In Sinclair and Johnston's report we find that, in the recorded cases, it occured once in 27 cases; and when not employed, the accident happened only once in 93 cases. In the same work we find three cases of chest affection aggravated by this means, two of which succumbed.

Dr. Ringland, in reply to a letter from me, writes:—"I have seen chloroform frequently used in puerperal convulsions, and have used it myself in connection with the practice of the Coombe Lying-in Hospital; and the conclusion I have come to is, that I will never again use it, or sanction its use, in puerperal convulsions. I have observed that however satisfactory its employment may appear at the time, it has been almost invariably followed by bronchitis within about 48 hours, and that patients have sunk rapidly under the latter affection. I have seen this so frequently that I cannot but look on chloroform and bronchitis, under the circumstances I have named, as cause and effect; and the mortality from the subsequent bronchitis, as the actual result of the employment of chloroform."

Ramsbotham relates the case of "a lady who was seized with dispnœa, with excessive lividity of the face, and all the signs of engorgement of the lungs and heart, and died in convulsions six hours after."

Murphy has published a case nearly similar; he also admits "that vomiting, nausea and headache sometimes follow on in its use." Nausea and vomiting were also present in one of Denham's cases.

Rigby states, "that intense headache, and even vomiting are consequences of its use."

Parks gives the case of a lady, in whom, after chloroform inhala-

tion, flooding came on to a fearful extent, and incessant sickness. He managed to extract the placenta; and, owing to the feeble contractions of the uterus (and this latter condition, he is confident, it often produces), he has kept grasping it for four or five hours; the vomiting contined for eight hours without intermission; the headache remained for weeks.

Tyler Smith "believed that post partum hemorrhage and retention of the placenta occurred more frequently after its use than without it."

Montgomery was of opinion "that it predisposes to retained placenta and hemorrhage."

My friend Dr. Young, before alluded to, says:—"I have blamed it for causing a longer retention of the placenta, and for occasional after-hemorrhage, owing to the lazy and inefficient contraction of the uterus. After its use opiates have very little effect; even very decided doses, in any form, have not been followed by that tranquility I have hoped for, in that violent pain which I have so often found to follow operations when chloroform had been used."

Murphy speaks of being obliged to press upon the uterus to expel the placenta, in two cases, after chloroform.

Some of the loudest advocates for chloroform inhalation in labor have, in order to counteract its deleterious effects upon uterine action, recommended the co-administration of ergot of rye; which practice reminds me of the astute physician who, to be sure to hit his patient's disease, prescribed for him the combination of a stimulant with a sedative.

Cusack and others have also testified to the deleterious effects of this drug upon the cerebro-spinal system of that infant.

Dr. Aveling speaks of "a lady who had chlorofrom in three labors, all of whose children, when unwell, had for years afterwards the smell distinctly off their breaths. This lady would never take it again."

Dr. Jackson (an American) thus writes upon the subject:—"When chloroform is inhaled into the lungs, the oxygen is abstracted from the blood, and, combining with the formyle, makes formic acid, while the chlorine combines with the blood as a substitute for oxygen. Thus a portion of the blood becomes chemically changed, disorganized, and rendered unfit for its vital functions.

Denham says:—There are cases in which chloroform appeared to be not only useless, but, when persevered in, positively injurious." And again:—"In giving chloroform we incur a certain amount of present danger, and perchance of remote ill effects."

Dr. Robert Lee, in reply to a letter from me, says:—"I could give you a great number of cases in which chloroform was not only injurious, but fatal."

Dr. Gream said:—"He agreed with Dr. Lee in saying that we were unacquainted with *one-tenth* of the evil effects which had resulted from the use of chloroform, particularly in Scotland."

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Dr. Duncan, in a letter to Dr. Lee, thus writes:—"Your case of chloroform death in midwifery is, to the best of my belief, not the only one in Scotland. I was called, too late, to a case which died suddenly while taking it in *small quantity*."

Dr. Campbell, of Ayrshire, records another case of death in labor from its use. Mr. Carter says "that in two cases its effects would appear to have been pernicious."

Prof. Faye, of Christiana, has also recorded a fatal case of labor after its use.

Dr. Rogers said "he knew of a case where death took place apparently in consequence of its use in midwifery."

Dr. Barnes says:—"In ordinary forceps cases chloroform certainly is not required, either to facilitate the operation or to allay pain. Indeed by its use in such cases we lose one very valuable indication in the loss of our patient's sense of feeling.

Dr. Chas. Kidd does not consider its use devoid of danger, as he advises the physician who administers it "*always* to carry in his pocket a portable galvanic chain or battery."

Drs. Kidd and Richardson are reported as having seen many deaths after its employment; and the former gentleman "to have seen about 300 cases restored to life or rescued after they had been pronounced dead."

I would ask, in the name of common sense, is it within the bounds of reason to believe that a medicine can be employed innocuously with the pregnant female, when confessedly its use has often been followed, not only by dangerous, but even fatal results under other circumstances, as testified to by Drs. Kidd and Richardson, amongst many others, as also by almost every periodical we take up.

We have been told that across the Tweed death has not, in any instance, followed upon the inhalation of chloroform in labor, whereas some have been since recorded; and not very long ago I was informed, by more than one physician practising in Scotland, that many have so occurred there, but not made public, yet well known to the profession.

It is also a fact that some who have written favorably on its use have since changed their opinions, but have not said so publicly. Some give it only in name, or as it has been styled *a la Reine*, making their patients believe that they are saved from a vast amount of pain, when in reality they have scarcely inhaled a single breath of it.

We frequently see better and safer recoveries after tedious and painful than after rapid and painless labors, and the latter are not the less likely to be seriously complicated; indeed in former days, when, happy for the perturient female, chloroform was unknown, and when meddlesome midwifery was strongly reprobated, such an opinion was entertained.

Even though it were possible to divest chloroform of its dangers, it does not, as has been already shown, always produce the

advantages expected from its use, as in version; for indeed not a few instances have been recorded of its having been an impediment to this operation, which in some cases, could not be overcome. I cannot see any advantage derivable from the inhalation of this poisonous drug in cases of retained placenta, as generally such a complication is caused by inaction of the uterus; and our object, therefore, surely not further to paralize it.

Every practical man hails after-pains as salutary, especially after quick and painless labors, and would not dream of interfering with their wholesome action, unless very severe, for some hours after delivery; yet those misguided chloroformists think nothing of interfering with that safe action at times when the advent of hemorrhage would complicate matters more seriously. The other objections to its use at other times, under certain circumstances, are equally admissable here. I think I have now demonstrated not only by my own experience but also by some of the highest obstetrical authorities in the land, that chloroform inhalation is far from being a safe remedy in childbed, and should not then be employed.—*Dublin Quarterly Journal of Medical Science.*

Editorial and Miscellaneous.

The Commencement Exercises of Starling Medical College were held in the Congregational Church on the evening of the 1st of March. The *Commencement Address* was delivered by A. D. LORD, M. D., Superintendent Blind Asylum; the *Valedictory* by Prof. HAMILTON.

The Degree of Dr. in Medicine was conferred on the following gentlemen:

A. W. Wells, R. M. Morris, R. C. Downey, Chas. E. Poe, John M. Evans, John W. Holmes, U. B. Brisbine, W. D. Crumley, John S. Gard, W. B. Boyd, J. P. Schilling, W. P. Bean, Chas. Quinn, B. F. Leslie, E. M. Downs, Jas. McClure, J. C. Batdorf, L. H. Gratigny, John N. Booth, Chas. R. Morgan, C. J. Hagan, Jas. A. Sampsell, H. H. Price, J. Palmer, J. J. McConkie, A. J. Murbach, Matthias Cook, George Willis, Calvin D. McDonald, J. A. Smith, Wm. W. Bickett, J. R. Kelch.

The class of the past session was larger than for several years. The material composing it, too, was very good.

In this connection we may say to the alumni and other friends of Starling College, that the institution is now in a flourishing condition. Its facilities for instruction are as good as can be found anywhere. The Museum, although not as large as some, nevertheless contains some of the finest things in the world, and it is in the constant receipt of new additions. The Anatomical and Chemical departments are very bountifully supplied with every thing necessary to their illustration; and these fundamental branches receive the prominence in the course to which they are entitled.

The present number of the Journal is so much occupied with original matter that we are compelled to postpone "Notices" and "Reviews" until our next.

To Subscribers.—We again remind our subscribers that *business* communications should be addressed exclusively to Prof. T. G. Wormley, who now has charge of that department, and is giving it the attention it has so much deserved.

Advice to Medical Students.—Next to a knowledge of the profession, or even before it, the way to succeed in medicine is to possess a knowledge of human nature. That is to be got by living in public; by incessantly mixing with your fellow-creatures, watching their peculiarities, imitating their excellencies, avoiding their foibles, and behaving yourself with truthfulness, frankness, generosity and plain dealing. Shy men do not get on well in the world, nor do absent men, nor do people with a reserved and distracted air, nor slow, awkward men, nor people who hedge, and trim, and potter, and never give a plain answer to a plain question, and never seem able to form a positive opinion and stick to it. But the sovereign cure for all these infirmities is the course we recommend. Verify all facts by your own senses; never be a mere book-worm, and never prefer solitude to good society.—*London Medical Times and Gazette.*

We have seen proper to transfer to our columns the above extract, which we find in an eastern medical journal, and which

stands accredited in it to the *London Medical Times.* We have done so for the purpose of noticing what we consider a large amount of error mixed up with a very small amount of truth. It not unfrequently happens that a single paragraph like the above, nay, even a single sentence, will so forcibly impress itself upon the mind as to give bias to the whole tenor of life. And our remarks may, moreover, be considered as not unappropriate at this season of the year—the closing term of most medical colleges—when the anxious mind of the medical student is looking forward, with no little apprehension, to the time when he shall take his stand on the active theatre of life, and is alive to everything which may have any bearing on the end and aim of his studies—professional success.

No language can magnify the importance of starting on a professional career, with correct views of what constitutes a success, and how to obtain it. If it be our aim and desire merely, to obtain by some means, an extensive, and even lucrative business, without reference to the means by which it is secured; if, in other words, we lose sight of the great end and object of our noble science, and pervert it to purposes utterly selfish and mercenary, the advice given in the above extract might not be considered out of place.

But we humbly conceive that no one who has the true interest of the medical profession at heart, would advise a student to base his expectations of success upon any other foundation than an adequate knowledge of his profession. It is true the social element of success is not to be despised, but it should at all times be subordinated to our faithfully and intelligently filling the measure of what is expected in these days of a learned and dignified profession. The avenue to a successful and honorable career as a medical man, does not lie through the crowded haunts of fashion's votaries. It is not to be obtained "by living in public" or incessantly mixing up with your fellow creatures, except as our professional or social duties require us. Far be it from us to advise that any man should sink his humanity in his trade or calling, or that he should be ignorant of, or refuse to take his share in the leading social or reforming enterprises of the day. But to seek notoriety as a means of professional advancement, to be constantly seen in public places, to be a hotel lounger, a political agitator, a frequenter of billiard saloons, or any other kind of saloons, or to

be spending his time in watching the peculiarities of others, and endeavoring awkwardly to imitate their excellencies, when he should be honestly and frankly acting out his own, is not the course of life which usually leads to the attainment of an extensive medical reputation. There is no pursuit, not even excepting the law, which is so exhaustive of the powers and resources of the human mind, as the science of medicine. To a successful devotee it gives no time for such daliance with the toys of social life. So exacting is it, that it affords him but little time to bestow even on other kindred sciences, and if he would be thoroughly versed in his own, he must forego much of the pleasure which a more intimate acquaintance with them would afford him. To a medical man there is nothing of so much importance as a distinguished medical reputation; but, to be available, it must proceed from an appreciation of abilities and acquirements, which really exist, and not a fictitious celebrity. It is no real abiding advantage to any one, to be placed in a position in which he cannot honorably and with credit sustain himself. It only renders his weakness and failure the more obvious and glaring. The very surest means of securing success in any enterprise, is to deserve it—it is emphatically so in medicine. Furthermore, a man's success, as a general thing, is a measure of his capacity—we use the word capacity in its fullest significance. We are often prone to place a higher estimate on our deserts, than those who are at least more impartial, if not better judges, of them than ourselves. True merit and skill, with any reasonable degree of energy, must eventually succeed. If a man really can stay the inroads of disease, and prolong life more successfully than his neighbor, the public will not be long oblivious of the fact; and if he is deficient in the essential qualities of his profession, no meritritious aid or support will redound to his lasting advantage.

We did not commence this article with a view to writing an essay on medical ethics, or go into an exhaustive analysis of the advantages of, and means of acquiring an extensive medical reputation.

Our object is simply to controvert the idea that it lies outside of a man's professional life, that it is to be secured, as intimated in the above paragraph, by making a public exhibition of ones self, to the neglect of those higher and important duties, which imperiously demand our time and our attention.

Our advice, after more than a quarter of a century's active practice, and extensive observation of others, is, to make yourself, by careful, judicious reading, and every other means and appliance within your reach, thoroughly proficient in your profession.

When not engaged in the discharge of your professional duties, your place is in your office.

Do not lean upon any adventitious or extraneous aid, but make your influence be felt by the force of that power which always proceeds from superior knowledge and skill.

Be candid, truthful and honest, neither deceiving the patient, the friend, or yourself.

Never, under any circumstances, allow yourself to be drawn into detraction of your brother practitioners, and always be willing to concede the possession of merit where it really exists.

And, lastly, be thorough, work up your business; treat every case as though your entire success depended upon it. This is, perhaps, *ceterus paribus*—the most important element of all.

R. M. D.

Indians of San Diego County, California. By Acting Assistant Surgeon D. B. Hoffman, U. S. A.

The Indians which inhabit San Diego County formerly evidently belonged to one tribe. The genuine name of that tribe, when the whites first visited this coast, was "Los Cayotes," and they recognized Juan Antonio, at least so says their history, as their chief. He then resided in the mountains north of Warner's Rancho, at a place called by them "Cayotes." This old chief's family still resides there, and one of his sons is the acknowledged chief of the tribe yet, bearing the same name. It is said, by the early Spanish writers, that the name of this tribe comes from the fact that these Indians, when first discovered, lived mostly in caves or burrows under ground, like the animal from which they take their name; and, I am told that, in the wild mountains, they still live in the same manner. This tribe, at the time of which I write, was probably much more numerous than at present. They scarcely number now, all told, four thousand. The Old Missions, established here during the latter part of the last century by the Catholic Missionaries, attracted many of them away from their old haunts and hunting grounds. When once initiated at a Mission,

as a neophyte and laborer, the influence that, to the uneducated mind, attractive religion, and the easy mode of life which they led, wholly weaned them from their forest homes. The consequence was, that the once large tribe, acknowledging allegiance to one chief, was divided and broken up into many small tribes. Wherever there was a Puebla or Mission, there would be found one of the small tribes located in the vicinity, in what they called the *rancheria*. When once settled in this manner, they appear to have renounced all allegiance to their old principal chief, as they chose a chief for themselves, who resided amongst them. But he, as a general thing, had little to do in their government; perhaps, now and then, they would apply to him, but oftener they would go to the civil authority or the priest of the Mission with their complaints, and for redress of their wrongs. Thus they became a disorganized and miserable people, who were slowly allured from one step to another downwards, until quietly subdued by the meanest of motives—mercenary gain—into beasts of burden, "hewers of wood and drawers of water"; for they were made more litterally slaves by the sycophantic priests who once "lorded" it over this country, than the most abject African negro that was ever heard of. Now and then, during this period, some of the more vigorous and active chiefs, ambitious to regenerate their race and retrieve it from the terrible thralldom into which it had been merged by superior but more brutal minds, would essay a revolt or revolution, on a small scale; but Spanish muskets and bayonets easily and quickly quelled them.

After the days of the Missions came another evil, greatly to the detriment of the poor Indian, and which well nigh exterminated them. This evil was the settlement of the country, over which they were used to roam without restraint, by the white man. With the advent of this predominant race came the precursor of the dissolution of the red children of the forest, in the shape of "fire-water," and those low, revolting diseases, known only to the low, dirty dregs of society—rakes, harlots and libertines. At the present time there are but few of them who are not either drunkards or diseased in such a way that life is but a curse to them. Those that are still living about the towns and missions have assumed civilized habits to such an extent that there is nothing interesting or peculiar about them. Those living in their old haunts, in a still semi-savage state, have many curious and singu-

lar customs, habits and traditional legends. Their habits of life are all very simple. They live in villages, often numbering many wigwams or huts. These are generally built by driving long poles in the ground, and bending them over, so as to form an arch; these are then thatched with straw all over, except a narrow hole in one end, which serves the purpose of a door. These villages are usually found near some stream, where there is a sufficient extent of good tillable land, for garden, agricultural or grazing purposes. They generally have a few head of horses, cattle and sheep, and frequently cultivate large fields of grain and fruit. Still they are somewhat nomadic in their habits, spending the summer in the mountains, and the winter on the coast. They also have a custom of coming down on the coast every year, at a certain time, for the purpose of taking their year's supply of fish. Instinct or experience has taught them that, at a certain season, millions of fish frequent the shore of the ocean, from some unknown cause, even to philosophers, and that, at that time they are easily taken. Rude nets or seines, manufactured from the tenacious bark of the "*tione*" tree, are generally used in taking them; and they are so expert and successful that the atmosphere is rendered pestiferous, for days at a time, in the vicinity of their fishing camps, from the refuse and surplusage, which they cannot cure before putrefaction takes place. This season does not generally last more than two weeks, at the end of which time both the fish and the Indians disappear from the coast for the year. In their conjugal relations they are like the "Mormons." When a brave desires a wife or wives, he, like a true *Yankee*, goes to the parents and bargains for them, the same as he would go to a store for tobacco or whisky. The price is generally a horse, or the value of one in something else. Their laws allow them to keep as many wives as they can support, and also permit them to separate, or voluntarily divorce themselves, whenever either party, from any cause whatever, becomes dissatisfied with the other. This, of course renders their morals corrupt and bad. Fidelity is unknown amongst them, and they think it no sin to "cuckold" their husbands, if they divide the spoils with him. In fact, he is so low in this respect that he will frequently hunt a bargain of this character, that he may get a drink of rum thereby.

They have many fetes or festivals, or, as they call them in their language, "pow-wows," during the year. These frequently end in

bloody fights, when many are killed. One of these feasts, which I have never yet seen a description of, and which, I believe, is not practised by any other known tribe, is of so extraordinary a charter that I deem it worthy of description. As soon as the young female arrives at the age of puberty she is put, as it were, under the guard of an old woman, who closely watches her until menstruation commences. As soon as this is noticed, the tocsin is sounded for a *tatamado* feast. It is obligatory upon the whole tribe to attend upon this occasion. As soon as they get together, they first dig a hole in the ground, large and deep enough to take the poor girl in up to her neck. The whole tribe, except the managers, during this time, are drinking, carousing, and dancing in a circle around the scene of operations. After the hole is finished, it is filled up with dry wood, fragrant leaves and bushes, in such a manner as to be lighted from the bottom. On the announcement that everything is ready, one of the old men of the tribe, a kind of prophet or priest, steps slowly forward toward the pile, with torch in hand, pronouncing, in a loud, clear tone, an incantation, which, for sublimity and pathos, is scarcely ever equaled by our more accomplished but less natural divines. As soon as the old man is through, a rude chant is hummed by the whole assembly. When this is closed the torch is applied, and as the flames arise heavenwards, the whole circle, on bended knee and uplifted face, pour forth, in unison, a devout prayer for their future preservation from all evil. As soon as this ceremony is finished, the hole is filled or strewed over with fresh green fragrant leaves. The poor Indian girl is then placed, by force, in the hole, and covered up to her neck with the fresh earth just taken out. The heat left from the fire is frequently so intense as to make the poor thing writhe and howl with the most intense and burning pain for hours. No matter; the feast goes on, and the howl of the participants drowns that of the victim. She remains in this situation—without any food, or anything else but water, which is given to her frequently and freely, or she would die—immovably fixed in this hot, seething, vapor-producing hole for forty-eight hours. During all this time, dancing, singing and carousing of all kinds are kept up by the tribe around her. When she is taken out, of course she is more dead than alive, and she is taken by the old woman to a comfortable place, when she is restored and revived by the "medicine man" of the tribe. This is the signal for the breaking up of

the feast, and all retire. Thus the mothers of the fair daughters of the forest "bring out" or notify to the world that their daughters are marriageable. It is true that there is some difference between this method and the fashionable one now in vogue in bringing out a *belle* in New York; but when one reflects that the same end is obtained—a husband—by either procees, it is extremely difficult, in the abstract, to realize the difference. The women, as a general thing, marry at an early age, while the men seldom do so before their twenty-fifth year. Like Zenobia, there does not appear to be much love on either side, and they say that there is no enjoyment in the whole affair, but that it is a necessity of nature for health and for the propagation of their species.

But little information can be obtained in relation to their diseases. During the spring and autumn, fevers of differnnt types prevail, to some extent, among them. I have seen them sick with the common intermittent, billious and continued fevers. Diseases of the chest, also, prevail to a considerable extent during the winter months. The exanthematous diseases play sad havoc with them when they come along. Their filthy and exposed manner of living will not do for this class of diseases. Of remedies they have, or at least use, but few. Each rancheria has a *sweat-house*. This is made by digging a large hole in the ground, and covering it over with timber, brush and earth, in the shape of a cone, making it air-tight, with the exception of a small hole in the top, for the escape of smoke. In this hole, which they dignify with the name of "*sweat-house*," or *casa de sudor*, when anything is the matter with them they keep a good fire, which keeps the place so warm that any one who enters will, in a few moments, sweat terribly. After the patient has sweat sufficiently to satisfy their ideas of treatment, he strips off his clothing, and rushes out as if mad, and jumps into the river, lake, or some other place filled with cold water. As soon as this becomes insupportable, he jumps out and runs or jumps about, until reaction takes place. After this terrible ordeal, he drinks herb tea, &c., and if he is not cured, repeats the same dose every day, until he gets well or dies. This is the treatment for most of their diseases. Last winter one of them had the smallpox: he tried this remedy. It did very well until he got into the cold water, where he died before he could get out. I have seen them come out of these *sweat-houses*, seething and sweating at every pore, in the winter time, when there was snow on the

ground and ice along the margin of the river—and plunge into the cold water, as if it were nothing. How they can stand the sudden shock, I am unable to discover; but they do it with as much *nonchalance* as a Frenchman affects a duel.

For gonorrhœa they use a strong decoction of an herb that grows very plentifully here, and is called by the Spanish "chancel agua," and wild pidgeon manure, rolled up into pills. The decoction is a very bitter astringent, and may cure some sores; but that it fails in many, I have undeniable proof. In syphilis they use the actual cautery—a living coal of fire applied to the chancre—and a decoction of an herb, said to be something like sarsaparilla, called rosia. It does not grow in this vicinity, and as I have never been able to get hold of any of it, I can say nothing about its medicinal virtues. It also frequently fails to cure this disease, and they have to get other aid or die. This completes the list of their medicines, if we omit the "charms," &c., which their "medicine men" alone know the value of, and use very profitably at times.

The accouchment of the female is somewhat different from the usual mode practiced by other tribes. A few hours before the time arrives, she gets up and quietly walks off alone, as if nothing extraordinary was about to occur. In this way she deceives all, even her husband, and hides herself away in some secluded nook, near a stream or hole of water. At the foot of a small tree, which she can easily grasp with both hands, she prepares her "lying-in" couch, on which she lies down as soon as labor pains come on. When the pain is on, she grasps the tree with both hands, thrown up backwards over her head, and pulls and strains with all her might, thus assisting each pain until her accouchment is over. As soon as the child is born, the mother herself ties the naval-cord with a bit of buckskin string, severing it with a pair of scissors prepared for the occasion, after which the end is burned with a coal of fire. The child is then thrown into the water; if it rises to the surface and cries, it is taken out and cared for; if it sinks there it remains, and is not even awarded an Indian burial. The affair being all over, she returns to her usual duties, just the same as if nothing had happened, so matter of fact are they in such matters. During the time which I had lived here I have never heard of one of these females dying from the effects of parturition. When any of them die they are generally respectably buried; but the hut and all the effects of the deceased are burned. Even

his favorite horse is sometimes killed and committed to the flames, to appease, as they say, their great grief.—*San Francisco Medical Press.*

On Dislocations of the Thumb.—J. C. Wordsworth Esq., reports three cases of this dislocation, in the *Med. Times and Gazette*, showing that the difficulty of reducing them arises from the malposition of the tendon of the long flexor. The first was a compound dislocation of the first phalanx of the thumb, produced by a fall on the extended hand, the phalanx being on the dorsum of the metacarpal bone. A wound extended across, and opened the joint on its palmar aspect. After failing to effect its reduction by simple extension, a close scrutiny of the wound showed the tendon of the long flexor between the ends of the bones, having passed round the ulner side of the end of the metacarpal bone, and by traction been drawn across the joint. Attempts to remove the tendon from its new position being unsuccessful, it was divided with a bistoury, and reduction easily accomplished, no displacement recurring. The second case was a simple dislocation upwards and backwards of the first phalanx of the thumb, with no displacement of the tendon; it being easily recognised stretching over the metacarpal bone, and drawn away from the first phalanx by the altered position of that bone. In this case reduction was effected by simple extension, only slight force being necessary to restore the bones to their proper position. The third case was a simple dislocation of the first phalanx upon the dorsum of the metacarpal bone. No trace of the tendon could be discovered. Attempts to reduce the dislocation by extension were made, and renewed, but failed. He now endeavored to replace the tendon by the following procedure, which he had previously devised: The wrist being fully bent, so as to relax the long flexor tendon, let the surgeon take the thumb in one hand and abduct it from the fingers, while with the other he steadies the metacarpal bone. He then is to rotate the thumb, so as to make the tendon retrace its course *forwards* and *inwards* around the lower end of the metacarpal bone, using the first phalanx as a lever in this intention. If this do not succeed, let him hyper-extend the first phalanx, so as to stretch the flexor tendons, rotate the phalanx *outwards*, and then carry it round the *inner* tubercle of the metacarpal bone, so as to dislodge the

tendon from between the ends of the bones." By adopting this course, the tendon was readily replaced, coaptation restored, and no tendency to displacement left. Since his attention has been directed to these cases, he has had reason to believe that dislocations of the fingers at the metacarpo-phalangeal joints, are also complicated by the malposition of their tendons; and has succeeded in reducing them by mere manipulation after considerable force had been vainly applied.

Literature in Medicine.

"It is a noticeable fact that the greatest physicians have always been the best writers among physicians."—ZIMMERMANN.

There is an anecdote current that a New York physician, recently traveling abroad, met a distinguished Parishian surgeon, to whom he spoke in sŏmewhat laudatory terms of his preceptor, a well known American surgeon. "What has he done?" was the prompt inquiry of the foreigner, adding, "I don't remember to have read any of his writings." "It is true, he has never written anything," replied the puzzled American, "but then he has a very large business." "And is that the standard by which you estimate professional excellence?" retorted the surgeon, with look and gesture expressive of contempt.

There is in this incident a world of meaning. It sets forth vividly a national trait in our profession, which disgraces us individually as a body. We are proud of being called practical, having no time to write, on account of the severe pressure of our business engagements. The young man who, after being located half a-dozen years in practice, still goes on foot, is set down as a failure. There is no hope of his ever rising to a level with the aristocracy of his profession. It matters little what may be his scientific attainments or his moral worth; he is an object of pity, if not of contempt. Men in high and influential positions frequently boast of their incomes, and exhibit their list of daily calls, or their bank-books, as an evidence of success. Half of the gossip in professional circles relates to the income of individuals.

These false ideas of professional success have taken deep root among us, and are bearing bitter fruits. The recent graduate is driven to seek business as the first great desideratum. He abandons the pursuit of special studies, for which he may have a pre-

dilection, because they will not immediately "pay." He cannot afford to labor patiently in the pursuit of knowledge, and let business come as its sweet reward. Like Ortugal, he demands that "the golden stream be quick and violent." If patients do not immediately seek him, he goes out into the highways and byways and compels them to come in. At all hazards he must have the appearance of business. Urged on by this infatuation, he assumes all the externals of success. His mode of living, and his equipage, are often far beyond his income, but he lives in the hope that these glittering baubles will advance his business, and in the end reimburse his outlay. He *may* attain the summit of his ambition, and acquire the largest practice in the community; but it is not improbable that he will sadly fail. But, whether he succeeds or not, he is lost to the science of his profession. He may seek positions in hospitals, schools, and societies, as collatteral aids to success, but in every position he is a nonentity. His name may be trumpeted throughout the world, but no man of education will even recognize it. He dies and leaves behind him no memorial but the perishable marble. A short generation passes from the stage, and his memory is swept forever from the earth.

It is time the profession of this country set up a higher standard of merit than that now so generally adopted. We should pay homage only to genuine worth. The palm of excellence should be given to him who has the profoundest practical knowledge of the science and art of medicine, and who makes that knowledge available to others.

As a profession we should not only cultivate science, but we should also cultivate literary taste. History and observation prove the truth of Zimmermann's remark—that the greatest medical writers of any age were the best physicians. We have no right to ridicule the man who frequently communicates his views to the profession. While it is true that too many write who have nothing worthy of publication, it is sadly true that many who fill high places withhold altogether their experience from their brethren. There are in this and other communities too many of this latter class. They are intellectually and morally worthy of the confidence of the profession, and capable of being the leaders in the department of practice to which they are especially devoted. By virtue of true merits they have obtained responsible positions in our hospitals, schools, and associations, and are qualified by long experience and sound

judgment to instruct. It is to them that the profession look for sound instruction in practical medicine, surgery and obstetrics, and for a just estimate of the value of the more recent improvements. But they are sealed books that give no information. They are quick to turn every advantage which official position may have given them to their personal and pecuniary account, but they make no return to those who have raised them to power. They will have their reward in that utter oblivion which is hereafter to cover their names.—*Amer. Med. Times.*

Two new medical dictionaries have been announced as in course of preparation in France. The first is to be called the "Encyclopædical Dictionary of Medical Sciences," and will consist of twenty volumes octavo, of about 800 pages each, and be issued in half volumes. The contributors comprise the names of the most prominent old and young celebrities. The second will be called "The New Dictionary of Practical Medicine and Surgery," consisting of twelve or fifteen volumes, of 800 pages each. The contributors are about thirty in number.

The Birth of a Prince.—The birth of an heir to the British Crown has given rise to the usual amount of congratulation in courtly phrases in the English papers. The extremely commonplace circumstances, however, attending the birth, have not failed to call out a certain degree of vulgar comment. The Prince of Wales and his wife were in the country, and she was engaged on the day of her confinement in skating. Her accouchment was not anticipated in two or three months, according to the regular order of things, dating from the period of marriage. She had felt some pain in the morning, but it was not ascribed to the true cause. Towards evening the symptoms became unmistakable, and then the scene began. There was no preparation for the coming event; the accoucheur was in London, and was immediately telegraphed; there were no attendants worthy of the occasion. Meantime, the progress of events showed that the denouement of the heir was more rapidly approaching than the accoucheur, and it became necessary to call in Dr. Brown, a plain country practitioner, who

had the honor of officiating at the birth. The physician-accoucheur, Dr. FARRE, arrived from London just too late. The child was wrapped in cotton in the absence of all baby clothing, and from a neighboring infirmary plain Mrs. CONNOR was selected to wet-nurse the infant. The medical attendants issued a bulletin announcing the happy delivery by the Princess of a Prince. Thus ended a scene in high life, not at all unlike that which often occurs in the humblest cottage. The *Saturday Review*, in a very sarcastic vein, ridicules the court customs on such occasions, and takes the medical attendants to task for announcing the birth of a Prince, as though a Prince could be born, and states that it was their duty to declare simply whether the child was a boy or girl.—*Am. Med. Times.*

Bromine in Gangrene, Erysipelas and Diphtheria.—In a late number of the *Canada Lancet* will be found some interesting remarks by Dr. Stanford, on the employment and the success of bromine in hospital gangrene. Surgeon GOLDSMITH, the discoverer of its effects in this disease, gives in the *American Medical Times* of September last, a consolidated statement of upwards of 350 cases, occurring in the Military Hospitals of Louisville, New Albany, Nashville and Murfreesboro. By it, we find that the mortality after its adoption, has been less than three per cent. And he denies that these even would have been fatal, had not granulation been checked by a too frequent application. He shows also that the total results do not differ, whether this liquid be employed pure or in solution, although experience, he says, has taught the army surgeons that the speedier and better mode is to apply the pure undiluted bromine; and that unlike destructive caustics, it does not affect the healthy tissues. His table teaches us besides, that of those treated by means of nitric acid and other agents, but 50 per cent. have recovered.

He speaks also of four cases where the arteries had become involved, and hæmorrhage set in, and the surgeons had tied the vessels at the bottom of the sloughing surfaces before applying the bromine over the whole, and yet the patients had all done well, and recovered without any subsequent bleeding.

Dr. POST, who has recently returned from a visit of inspection

to these hospitals, bears testimony to the truthfulness of this report. He thinks more favorably of the solution in such cases, and gives the following formula, as the one most usually employed:

Rx. Bromide of Potassium 160 grs; Water 4 oz; mix, and add Bromine 1 fluid oz. Shake the mixture well.

And recommends the use of a syringe, both for the washing of the gangrenous part, and the thorough injection of the solution, which destroys the odor at once, and gives the wound the appearance of being varnished.

Surgeons differ, he says, as to the frequency of the application, from once to two or three times in the twenty-four hours, until granulations become visible, after which the solution must be weakened.

Yeast is generally kept to the part when obtainable, but an excellent substitute, and one which is commonly employed in the army, is the ordinary poultice, made light and porous with carbonic acid, generated from carbonate of soda and tartaric acid, which should be mixed in the proportion of 30 grains of the former, to 25 of the latter, to render it neutral.

It seems hardly necessary to state, that in conjunction with this local treatment, the system requires to be sustained by means of stimulants, tonics, and good food.

Bromine has also proved extremely serviceable as a disinfectant of gangrene and erysipelas, in these hospitals; the vapor being allowed to pervade the apartment by occasional exposure of small quantities of the fluid upon saucers.

Dr. Post, in conclusion, alludes to the good effects of bromine in erysipelas. In the "Park Barracks," in Louisville, this disease broke out with great severity, and as soon as the bromine treatment was introduced, the disease ceased to spread. The remedy was used both in fumigation and as a local application. The surgeons were in the habit of moistening lint with the compound solution, applying it directly to the part, and covering the whole with oiled-silk. He saw a number of cases treated in this way where improvement had taken place in from twelve to twenty-four hours after the commencement of the treatment.

Dr. Percy states that he has been in the habit of employing the saturated solution of bromine for diphtheria, and with very satis-

factory results. He has also used it with equally good effect in syphilitic ulceration of the throat, and in tonsilitis.

Dr. METCALFE, also has for some time been in the habit of applying a combination of bromine and iodine to throat affections with equal success.

Acute Rheumatism.

Dr. Nevin's treatment by means of Quinine, Iodide of Potassium, and alternate Steam Baths and Cold Douches.

The *British Medical Journal* of August last, contains an article by Dr. NEVINS of Liverpool, on the following treatment of Acute Rheumatism, which he informs us, has given him greater satisfaction than any other mode he has ever employed. He says it is the result of fifteen years'experience, and suggested itself to him, from the acknowledged periodicity of this disease as shown by the general aggravation of pain and other symptoms as night comes on, the copious sweating &c.; and the great value of iodide of potassium in chronic rheumatism.

The treatment consists in combining quinine with the iodide of potassium, and commencing its administration from the first, without regard to acute pain or febrile excitement. He never directs over two grains of quinine with five grains of the iodide, which he gives four times a day. He says that the thick creamy fur upon the tongue disappears more rapidly from this mixture than by any other means. He allows opiates or Dover's powder at night if necessary to relieve pain or secure rest.

In conjunction with this, he employs from the very first, steam baths, and this even when the patient is so helpless that it is impossible to move him from the bed on which he is lying. In the latter case they are produced by wrapping hot bricks in flannel previously soaked in vinegar, and laid upon plates and placed in the bed, one about a foot from the shoulder, and the other the same distance from the opposite leg, the patient's body linen being previously removed; the bedclothes should be well tucked in round the neck and elsewhere. A most refreshing acid steam bath is thus obtained, which may be kept up by replacing one of the bricks with another hot one. In about fifteen or twenty minutes the bedclothes and plates are removed, and the patient instantly mopped all over with a towel wrung out of cold water, and then quickly

rubbed dry. Great relief is at once experienced from the pain and exhausting acid sweats. After a thorough wiping, a warm dry blanket should be thrown around him while the bed is turned over and the bedclothes are being changed and warmed. He says that he has rarely found it necessary to give two of the steam baths in bed, the patient almost always being able to take the second, sitting up. A couple of gallons of boiling water is to be placed in a vessel beneath a chair, and the sick person, seated on a folded blanket, is wrapped about with another around his neck tent-like, allowing the lower border to descend to the floor. The steam is kept constantly generating by means of hot bricks put into the water. After fifteen or twenty minutes the blankets are removed, and a couple of quarts of cold water poured over the shoulders before drying quickly and thoroughly. These baths are to be continued even after the patient is able to walk about. Opiate embrocations containing chloroform or tincture of aconite may be employed to relieve the pains in the joints.—*Canada Lancet.*

Faradization for Extensive Burns.—Dr. RABOLD, of Paris, highly recommends this agent for the relief and cure of burns. His directions are as follows:

"The part of the body which has suffered from the effect of fire is immersed in a basin, or if necessary, a bath of water; the negative pole of the apparatus is put into communication with the water by means of the usual conductor, while a wire from the positive pole communicates with some point of the body out of the fluid and not far distant from the part affected. The electrical current is then carried through the latter, its force being regulated according to the patient's strength. To ascertain whether sufficient electricity has been administered, the patient exposes the burn for an instant to the air, and if he does not feel the intense pain any more, the operation may be suspended—in the contrary case it must be resumed until that effect is produced. So long as the part affected remains immersed in water, under the influence of electricity, the patient feels no pain. In mild cases, an hour's exposure to electricity is sufficient for complete relief; in more serious cases it must be continued for three or four hours, but the cure is stated to be both prompt and certain. When the whole person has been

injured by the flames, the patient must be put into a bath with the negative pole in the direction of the feet, and the positive one placed in contact with the nape of the neck. Part of the water must be changed every quarter of an hour, to prevent the bath from getting warm.—*Correspondence of Phila. Med. and Surg. Rep.*

The Bromides in Whooping Cough.—This new therapeutical agent, which was some little time ago found by Dr. GIBB to be an anæsthetic to the larynx, is now being turned to further practical account in the treatment of whooping-cough. Within the last nine or twelve months, Dr. HARLEY has been treating nearly all the cases of this disease brought under his care at University College Hospital by means of the bromide of ammonium, and the results of the treatment seem to be highly satisfactory. As a rule, the dose of the remedy is a grain for every year of the age. This rule is, however, not always adhered to. In cases where the children are well developed and strong, Dr. HARLEY occasionally gives as much as double that dose, namely, two grains for every year of the child's age. The bromide apparently acts by simply removing the whoop, which is by far the most troublesome symptom, and after that has disappeared the case is treated as one of simple bronchitic cough. The remedy was first administered by him with a view of inducing partial insensibility of the glottis and thereby counteracting the spasm, as it appears to be the chief source of the child's misery.

Bromide of potassium, which has a similar anæsthetic power over the pharynx and larynx, has also been used in whooping-cough by Dr. RADCLIFF. The dose is about the same as that of bromide of ammonium.—*Med. Times and Gazette.*

Arsenic in Pemphigus.—Mr. HUTCHINSON of the Metropolitan Free Hospital, gives a very interesting case in proof of the wonderful effect of arsenic in the cure of pemphigus. He says that it renders relapses less likely, and that an improvement may be noticed immediately on its employment, not a single fresh bulla showing itself after the first few days of the treatment.—*Medical Times.*

Clinical Lecture on Cases of Tumors under Moles.—By JAMES PAGET, F. R. S., Surgeon to St. Bartholomew's Hospital.

The occurrence of melanotic cancers under or in moles or pigmentary nævi has been long known. Among the cases of this disease, having their primary seat in or near the skin, more than half have thus grown in close relation with moles. There can, therefore, be no doubt that these congenitally defective or diseased parts offer some conditions peculiarly apt for the growth of melanotic cancers. What these conditions are we cannot tell, any more than we can what those are which are sometimes induced in a part by injury. Their reality and influence are, nevertheless, certain. And with the knowledge of these facts some useful points in practice may be connected. For example, if a patient have a tumor growing in or beneath a mole, it must be considered as most likely a melanotic cancer; or if we have an increasing outgrowth from a mole, epithelial cancer must be suspected. And if in any one, especially an elderly person, a mole begins to grow prominent, or to become more vascular or more irritable, it had better be forthwith cut out or destroyed with caustic. I have known cases in which, when moles are quickly increasing, and changing just like those that have afterwards become seats of melanotic cancers, their total destruction has been the end of all mischief. Of course, I cannot be sure that these would have become cancerous if they had been left; but I believe that, at least, some of them would, and that the rule for the destruction of all growing like them is a good one. If the formation of cancer be not quite averted by it, it may be deferred, as it seemed to be in a case I have lately seen. A patient had many pigmentary moles in his back. Five years ago one of them began to grow, and Sir Benjamin Brodie destroyed it with caustic. The scar remained sound until a few months ago, when an epithelial warty cancer began to spring up from it.

Hitherto, I believe that the only tumors for the growth of which moles have been known as offering peculiarly favorable conditions, are melanotic and, much more rarely, epithelial cancers.

But the tumor removed last Saturday is an instance of another kind, of which I have now met with three examples. The patient from whom this tumor was removed was sixty years old, healthy all his life, and very temperate, and in the site of the tumor there had been a mole as long as he could remember, and like one which he has on the back of the neck. This, however, never gave him

any trouble until about nine months ago, when, with some tingling, etc., it began to enlarge, and had gradually increased in size up to the time of his admission into the hospital.

A second case, which came under my notice a few years ago, was in a gentleman, who was unhealthy with repeated fever and other less serious maladies. He had noticed the tumor for at least four years, and it might have existed much longer, and have been overlooked, till, during these years, it had increased more quickly than before. In this, as in the last case, there had always been a mole at the place; but it was uncertain when the change and increase took place in it.

The third case was a woman, aged fifty-nine, who was admitted into St. Bartholomew's Hospital in 1850. She was rather a feeble looking, poor woman, high-colored, but not robust. She had always (she said) been feeble and ailing; but in the three years before her admission into the hospital her general health had been better than usual. Since childhood she had had several sebaceous or epidermal cysts of the scalp, but nothing of the present tumor over the sacrum had been noticed till between six and twelve months before admission.

The cutis over this tumor had, after, as well as before the removal, a distinctly brown hue, which gave it the appearance of a mole—a mere pigmentary mark, not raised above the surrounding skin.

In these three cases the tumors were so alike, that, with few additions, one description may suffice for all. Growing on the back of the trunk, they lie imbedded in the subcutaneous fat. They are roundly oval, moderately well-defined to the touch, closely connected with the structures round them, very firm, heavy, dully elastic, feeling like fibrous tumors. The skin over them is raised and thinned by their growth; adherent, but not confused with their surface; and, in addition to the dark tint of the mole spread over part of the surface, the skin has a dusky, or ruddy and glossy, tint of diffused vascularity; and enlarged veins ramify over it, or away from it. The skin, or the tumor beneath it, has been in two cases the frequent seat of hot, burning pain; in the third there was no pain.

The secretion of the tumor has a lowly nodular or tuberous outline, easily separable by dissection from the surrounding skin and subcutaneous tissue. The cut surface appears divided by whitish

tissue into lobes and minuter lobules, much like those of the secreting conglomerate glands. It is very pale, grayish-white, with tinges of yellow or pale purple, smooth on its section, and glistening. It may have minute cavities filled with fluid, or one or more larger cysts, containing serous fluid or grumous matter. The substance is firm, but brittle, easily breaking into small fragments, yielding on pressure or scraping only some yellowish clear fluid, and no turbid fluid like cancer-juice even after it begins to decay.

The microscopic appearances are too various and indefinite for any useful minute description. There are appearances of glandular arrangement in minute acini, or in groups of cells of similar form. The cell structures, of which nearly the whole mass is composed, are some of them very like epithelial cancer-cells of various shapes; some, like those cells withered, or rolled up, or very small, or abortive, and without nuclei; some, more like elongated and very small cylinder-epithelium cells; some like small, thin gland-cells. With these are granular matter, bodies like free nuclei, appearances of fragments of membrane; but no more traces of fibrous or other such structures than may be referred to the partitions between the lobes, into which the whole substance of the tumor appears divided. In none of the cases has there appeared any pigment matter indicating relation to the melanotic growths more commonly found under moles.

There is sufficient in these structural characters to prove the occurrence of a form of tumor which, so far as I know, has not hitherto been described; but there is not enough of what is definite to justify the giving of a new name. More specimens must be examined before this can be safely done. Meantime, it may be held that moles are, even more than has been supposed, apt to be the seats of the growth of tumors, and that among the tumors likely to be found in or beneath them are some which are neither epithelial nor melanoid cancers, and which, probably, are not cancers at all.

One of these cases, indeed—the second—has now remained well, without any recurrence, for more than four years after the removal of the tumor—a period much longer, almost certainly, than that which would have elapsed after the removal of a deep-seated epithelial or a melanotic cancer.—*Med. Times & Gaz., January* 10, 1864.

Two New Cases of Syphilis Conveyed by Vaccination.—Besides the case of M. Devergie, lately mentioned, we have now one alluded to by M. Chassaignac before the Surgical Society of Paris; and another observed by M. Herard, and brought before the Medical Society of Hospitals. The parents, in both cases, have not suffered from syphilis, and the specific ulcers became apparent in the children at the spot where vaccination had been performed. The symptoms of syphilis were verified by the members of both the above-mentioned Societies.—*London Lancet.*

Nyctalopia.—Prof. Hind, of Toronto, has published some curious details concerning the nyctalopia, or night-blindness, prevalent among the Montagnais or Nashquapee Indians. The sufferers from this affliction can see perfectly as long as the sun is up, but become nearly or wholly sightless from sunset until dawn. No artificial light is of the least service.—*London Lancet.*

The Medical Staff of England.—From the last census it appears that there are, in England and Wales, one surgeon or general practitioner to about 1,712 of the population, one physician to 5,552, and one dentist to 3,505.—*London Lancet.*

Sulphur in Asthma.—Dr. Duclos, of Tours, recommends washed sulphur in doses from $\frac{3}{4}$ to $1\frac{1}{2}$ grains three times a day for several months. And the *Boston Medical Journal* mentions three very bad cases of asthma, which it says were completely cured by this treatment. It is simple, and may be readily tried.

Sub-nitrate of Bismuth in Diarrhœa.—Dr. Trask, of Finley Hospital, Washington, in a pamplet gives his experience of the effects of bismuth in acute and chronic diarrhœa, after its successful employment in many hundreds of cases. He says that he has generally found a single dose of from 15 to 25 grains, either alone or in combination with an equal quantity of calomel, to be quite

sufficient, but when the attack is extremely violent he gives from 40 to 60 grains of the bismuth alone. Ordinarily it produces nausea in an hour or two after it has been taken, but when the case is severe it seems to arrest all gastric disturbance, remove the feeling of extreme prostration, and completely to check the discharges, thereby necessitating the employment of castor oil afterwards.

In chronic cases he gives the remedy in doses of a dram daily, or 40 grains twice a day. Quite a number of those treated had been suffering from six to eight months previously; and the average period of treatment found necessary, was from five to six days, but the greater majority recovered in from two to four days.—*Canada Lancet.*

Treatment of Dysentery by large doses of Ipecacuanha.—The use of ipecacuanha in dysentery is by no means novel; but the employment of such large doses, and in the method here described, is (Dr. Hillier said,) of comparatively recent date.

The plan is to give a drachm of tincture of opium, to apply a mustard plaster over the epigastrium, and, in twenty minutes, to give a drachm or a drachm and a half of powdered ipecacuanha in a very small quantity of peppermint water, or simple water. Sometimes half an ounce or an ounce of castor oil is given, with half a drachm of laudanum, before beginning the special treatment; this is, however, usually found to be unnecessary. Vomiting is not often induced, and the cure is often immediate. A patient may be passing every half hour or oftener, blood and mucus, or bloody serum with pus. They cease at once for about twenty-four hours; he then has a natural stool, and is well. The diet is farinaceous.

In May, 1862, Mr. Baylis, of Ceylon, wrote to Dr. Hillier that he had treated fifty or sixty cases in this way, and only lost three, who were in articulo mortis when they came under his care. He writes that he has continued the plan of treatment up to the present time, and expresses himself equally satisfied with it. He gives the following as an illustration of the results of this treatment:

"A highly phthisical young gentleman, in whose lungs softening had commenced, came out here for his health. I told him the climate would not suit him. However, he disregarded my advice,

and I was soon called to see him. I found him in bed, unable to speak above a whisper; pulse very weak, about 100; face flushed; tongue thickly coated with yellow fur; tenderness and pain in abdomen, especially in the left iliac region. He had been suffering from diarrhea for four days, During that day and previous night he had passed upwards of sixty motions; they were at first copiously feculent, latterly, almost pure blood, with a little slime. He had been feeding most imprudently. I gave him at once a drachm of laudanum, and put a mustard plaster on his epigastrium. In twenty minutes I gave him a drachm of ipecacuanha powder in a wineglass of water. He did not vomit. Those who saw him at the time thought he could not live twenty-four hours. Next morning he was much the same; had fainted once or twice on going to stool, but had only passed seven motions, composed of blood and stuff like the washing of meat. He had now much pain in the stomach and bowels. I ordered an opiate injection three times a day, and at 6 P. M. put on a blister and repeated the laudanum, followed by the ipecacuanha, as on the previous day. Next day he passed only two motions; there was just a trace of blood, but they were largely feculent. The morning after, the motions were solid and natural, and he rapidly recovered without more medicine. His diet was sago and arrowroot."

Dr. Hillier has made the opportunity of trying this mode of treatment at the Children's Hospital. It was in the case of a child aged four years, suffering from subacute dysentery contracted in Barbadoes. He gave five minims of laudanum, and in half an hour fifteen grains of powdered ipecacuanha. There was no nausea or any unpleasant symptom caused by the medicine; and although the patient had previously passed five or six motions, containing much blood and mucus, every twenty-four hours, there was no evacuation for thirty-six hours. He then passed an ordinary feculent motion, and from that time he continued quite well. It is stated that ipecacuanha has the effect of rapidly healing large dysenteric ulcers. Dr. Hillier suggested that it might be worth while to try it in the diarrhea dependent on tubular ulceration, or in typhoid fever. The opium is supposed to act mainly in preventing vomiting, but it may, with ipecacuanha, have a more specific action on the disease.—*Medical Times and Gazette.*

Iberis Amara, a New Purgative.—We observed Dr. Wilks use a purgative which was new to us, the *Iberis amaria*, or candy tuft-seed. He had been recommended to its use by Mr. Stillwell, of Epsom, who said that it had been a favorite purgative medicine with him during the whole of a long practice, given either alone or combined with jalap powder. The seeds, when bruised, are oily and acrid, and when made into a pill of four or five grains, act as a good purge. Dr. Wilks said he had found it answer its intended purpose; but as there was no want of aperient medicines in the Pharmacopœia, he saw no reason to adopt it in preference to those in ordinary use. A strong Irishman took three grains with no effect, but ten grains purged him two or three times. A man who was habitually constipated, and who had been taking magnesia mixture daily with only slight effect, was ordered three grains three times a day; he took five pills, and was purged violently several times. A lad with cardiac dropsy took five grains, and in a few hours it acted twice. In some cases it produced sickness. In the case of a man with renal dropsy ten grains were given. In two hours he was sick, and in seven hours he was well purged. It was repeated, but without the sickness. In all about twenty cases were treated, and its purgative action well tested.—*Ibid.*

Syrupus Rhumani in Constipation.—At one time buckthorn was much used as a cathartic, but it has lately been chiefly used as a purgative for dogs by veterinary surgeons. Dr. Neligan says that the operation of the juice of the berries is very severe, and that it is "frequently accompanied by severe tormina, thirst, and distressing nausea." But Dr. Hanfield Jones says that he has used it recently, and finds it an excellent purgative, and he states that it has none of the faults above mentioned in any marked degree. He gives, to adults, one or two drachms of the syrup, and a drachm of the potassio-tartrate of soda. This is, he thinks, quite as good a combination as black draught, and is not nasty; this is a great gain, as black draught is to most people a horrible mess. The syrup is the only officinal preparation, and the dose is stated by Neligan to be ℥ss to ℥j. The dose prescribed by Dr. Jones is much smaller, but he finds it quite effectual in obstinate constipation, especially in habitual constipation.—*Med. Times & Gazette.*

The Terchloride of Carbon.—Mr. Bryant informs us that at Guy's Hospital the terchloride of carbon has been employed for many years, and that it was a very favorite remedy of the late Mr. Ashton Key, tracing its employment back, therefore, at least fifteen years. As a lotion it has acquired considerable value, and may be looked upon as a stimulant, and in a measure as a disinfectant. In sloughing and fetid ulcers it is of great use. It may be used in the indolent and weak ulcer with general advantage. The usual strength of the lotion is from *m*xx to ʒss of the drug to an ounce of water. It has an agreeable odor and rapid effect. In cases of gangrene, and in sloughing phagedena, it may be employed in its concentrated form with some confidence, a wound thus affected rapidly taking on a more healthy aspect. Upon the whole, it is a very valuable local stimulant, and in Mr. Bryant's estimation ranks above most of the drugs of that class now in use.—*Med. Times & Gazette.*

Use and abuse of Stimulants in Fever—Occasional Antiphlogistic Treatment.—A few days ago we saw at Guy's several patients convalescent with fever. In reference to them Dr. Wilks remarked on the treatment of fever by stimulants. A young man, who had had typhus fever, and who had been covered with the ordinary mulberry rash, had recovered without any. As there appeared no need to give any, Dr. Wilks wished to prove to his class that alcohol was not always necessary in fever, and that he did not by any means consider alcohol as an antidote to fever, for he found the disease always ran its course under every form of treatment. He considered the rule laid down by many of the older physicians to be the correct one with regard to the treatment of all fevers; that in very many cases supervision was alone required, and that in others a stimulant plan was necessary; the only question being the quantity of alcohol required and the time when it was needed. He thought, therefore, that those who spoke of their success by the universal treatment by alcohol in all cases of fever, were adopting (to say the least) a very unscientific method, which was, in reality, one founded on such a reasoning as this: That severe cases of fever are benefitted by alcohol, and mild ones are not killed by

it, and, therefore, it is safer to give it to all. The same may be said of those who declare carbonate of ammonia to be *the remedy* for all cases of scarlatina. It is, no doubt, of great value in severe cases, and in mild ones it certainly will not kill the patient. Dr. Wilks would not say, however, that wine and spirits did no harm, for in some cases he believed they were decidedly injurous, especially in young persons with typhus fever and violent delirium. He had such a case under his care, in which he ordered cupping to the back of the neck, and which was followed by quiet and sleep. He was a total disbeliever in the change of type theory; for such a case as this, and two others which he had seen bled, and yet did well, entirely refuted such an opinion. Although he believed the present plan of treatment by support saved more lives, he was quite sure, that if no stimulants were given, and that if the patients were bled, that the greater number would recover as heretofore.—*Med. Times and Gazette, Jan.* 23, 1864.

The Peruvian Cocoa (*Erythoxycon coca*).—The French authorities at Peru have had their attention directed to this substance with a view of naturalizing it in the French colonies, as a plant likely to prove of great utility in the military and naval service. The leaves, when chewed in moderate quantity every three hours, are said to have the power of enabling a man to do without food during three days, while it develops his muscular powers and animal spirits, and protects him against the insalubrity of climate. Its stimulant principle is three times stronger than that of coffee, and four times than that of tea. Miners and travelers are said by its aid to be enabled to take journeys of four days' duration without any other support, and it is obvious that, supposing this property to really exist, the plant may prove invaluable in forced military marches. It is to be expected, however, that these remarkable results will not be exhibited to the same extent in the persons of Europeans. Still, Dr. Montegazzi, of Milan, affirms that, although of a feeble habit of body, he was enabled to go forty-eight hours without any other aliment, and suffered no inconvenience.—*Med. Times and Gazette, January* 30, 1864.

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